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**National Highway  
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400 Seventh Street, S.W.  
Washington, D.C. 20590

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CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 90-14

FLEET - 1990 DODGE DYNASTY

LOCATION - [REDACTED], CT

ACCIDENT DATE - [REDACTED] 1990

Contract No. DTNH22-87-C-27169

Prepared for:

U.S. Department of Transportation  
National Highway Traffic Safety Administration  
Washington, D.C. 20590



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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

# TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 90-14		2. Government Accession No.		3. Recipient's Catalog No.	
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15. Supplementary Notes On-site investigation of an air bag deployment crash that involved a 1990 Dodge Dynasty.					
16. Abstract <p>This report focuses on a 1990 Dodge Dynasty that was involved in a severe head-on crash with a 1988 Chevrolet S-10 Blazer. As the Dynasty crested the hill, it was struck head-on by the Blazer as it attempted to pass several vehicles in a no-passing zone. Impact speeds were computed at 36.8 mph for the Dodge and 45.2 mph for the S-10 Blazer by the damage and trajectory algorithm of the CRASHPC program. The Dodge Dynasty sustained 36.25" of front bumper crush from the 12 o'clock direction of force impact. As a result of the crash, the Dodge underwent a speed change of 41.7 mph while the S-10 Blazer sustained a 40.7 mph velocity change.</p> <p>The impact deployed the Dynasty's driver air bag system. The driver of the vehicle was a 43-year-old male, 68", 175 lbs. He was not wearing the active 3-point lap and shoulder belt system. The driver moved forward and loaded the intruding knee bolster with his knees resulting in multiple lower extremity fractures. His thoracic area loaded the deployed air bag and steering assembly, compressing the energy absorbing steering column 2.5". The air bag provided the driver with a sufficient ridedown and prevented him from severe or fatal injuries.</p> <p>The right front passenger of the Dodge Dynasty was a 16-year-old female. She was not wearing the active belt system. Her head impacted the right A-pillar and windshield resulting in critical (AIS-5) injuries.</p>					
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## TABLE OF CONTENTS

	<u>Page No.</u>
Summary	1
Accident Schematic	3
Accident Data	5
Ambience	5
Highway	5
Traffic Controls	6
Vehicles	6
Vehicle Damage	7
Vehicle Velocity Estimates	9
Collision Sequence	9
Human Factors/Occupant Data	11
Air Bag Driver Injuries	11
Air Bag Driver Kinematics	12
Passenger Data	12
Passenger Injuries	13
Passenger Kinematics	13
Vehicle #2 Driver Data	14
Driver #2 Injuries	14
Air Bag System	14
Selected Prints	15
Slide Index	21
Appendix A: Police Accident Report	23
Appendix B: CRASHPC Output	28
Appendix C: Air Bag Supplement	33
Appendix D: NASS Vehicle Forms	40
Appendix E: NASS Occupant Forms	62

# CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 90-14

FLEET - 1990 DODGE DYNASTY  
LOCATION - [REDACTED], CT

## SUMMARY

This crash occurred on a rural two lane roadway in [REDACTED], on [REDACTED] September [REDACTED] 1990 at approximately [REDACTED] hours. A 1990 Dodge Dynasty 4 door sedan, equipped with a driver air bag system, was traveling in a northerly direction at an estimated speed of 40 mph. As the vehicle approached the accident scene, it ascended a grade of approximately 7% that crested at the impending point of impact.

A 1988 Chevrolet S-10 Blazer was traveling in a northerly direction on the two lane roadway at an estimated speed of 45-50 mph. The 27-year-old female driver initiated a lane change maneuver in a no passing zone and attempted to overtake several slower moving vehicles. She was apparently familiar with the area; however, she continued to pass as she approached the hillcrest. The driver of the Blazer apparently noted the Dodge Dynasty and attempted to swerve in a clockwise direction. The vehicle yawed approximately 5 degrees CW as it continued forward to impact. The driver of the Dodge Dynasty probably steered slightly in a counterclockwise direction immediately prior to impact.

The vehicles impacted in a head-on configuration in the southbound travel lane approximately 50' south of the hillcrest. The impact involved the full frontal areas of both vehicles with CDCs of 12-FDEW-4 for each vehicle. The Dodge Dynasty sustained 36.25" of crush (maximum) located on the front bumper 13.5" right of center. Crush values at bumper level were as follows:  $C_1=23.1"$ ,  $C_2=25.8"$ ,  $C_3=27.5"$ ,  $C_4=30.3"$ ,  $C_5=34.3"$ ,  $C_6=31.5"$ .

The S-10 Blazer sustained 35.25" of crush located at the left corner of the front bumper. The Blazer's crush profile at bumper level was as follows:  $C_1=35.25"$ ,  $C_2=33.0"$ ,  $C_3=26.6"$ ,  $C_4=19.75"$ ,  $C_5=15.5"$ ,  $C_6=13.6"$ . The damage mode of the CRASHPC program computed velocity changes of 41.7 mph for the Dynasty and 40.7 mph for the S-10 Blazer. As a result of the impact induced deceleration, the Dynasty's driver air bag system deployed.

The impact rotated the Dynasty approximately  $18^\circ$  in a counterclockwise direction as it came to rest near the point of impact, straddling the center line of the roadway. The S-10 Blazer rotated approximately  $11^\circ$  clockwise, coming to rest adjacent to the air bag vehicle.

The driver of the Dodge Dynasty was a 43-year-old male, 68", 175 lbs. He was not wearing the active 3-point lap and shoulder belt system. At impact he moved forward in response to the 12 o'clock direction of force impact and loaded the intruding knee bolster (4.5") with both knees. His left knee scuffed the bolster 19.5 - 24.5" left of center. The driver's right knee contacted the bolster 9 - 12.5" left of center. The contact fractured the driver's right

## SUMMARY (CONT'D.)

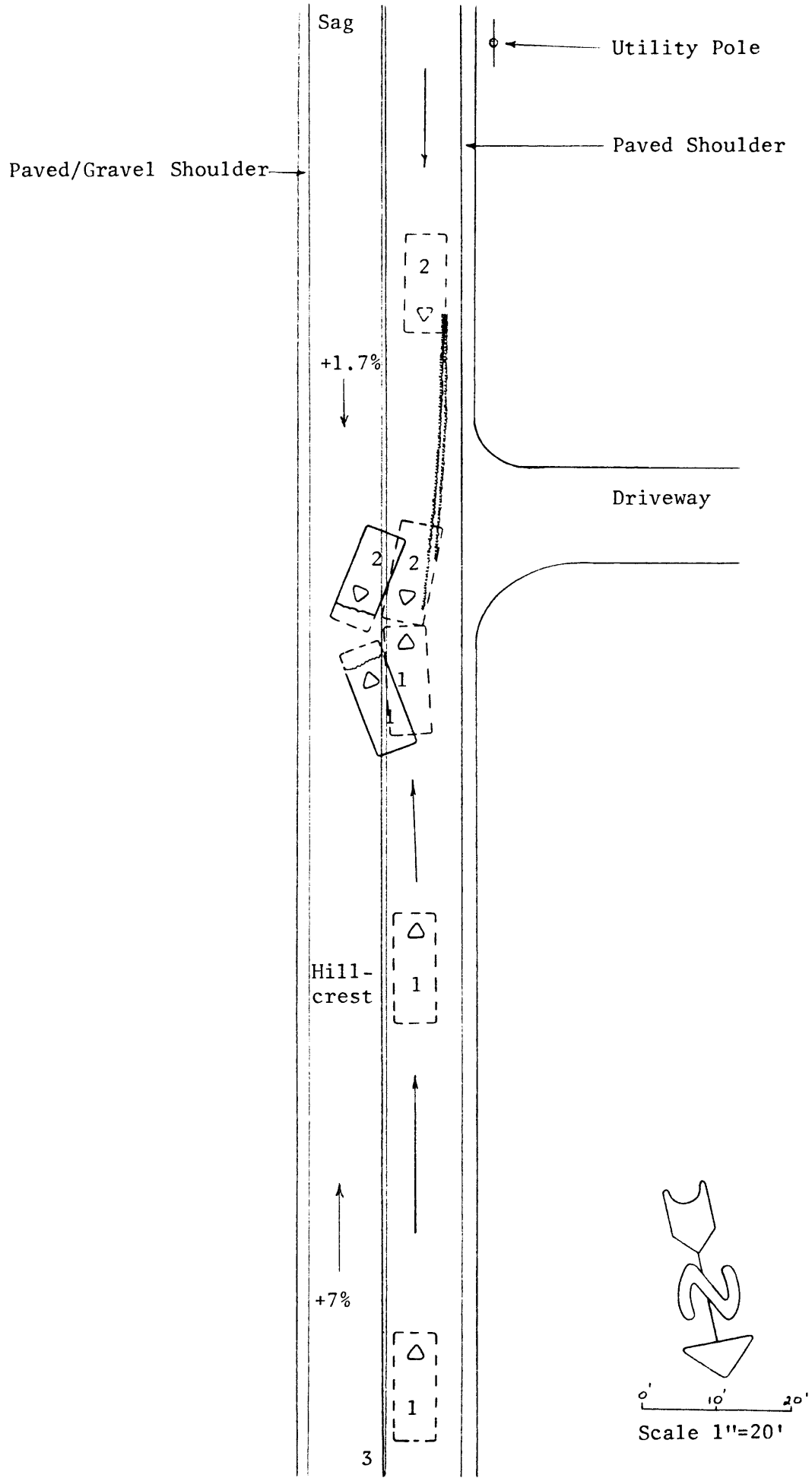
patella (AIS-2). Bone fragments penetrated the padded bolster and backer panel. The right knee loading force resulted in a fracture of his right femur (AIS-3) and of his right acetabulum (AIS-2). He also sustained fractures of both ankles and of his right heel from loading the intruding toe pan. The driver's thoracic and facial areas loaded the deployed air bag with sufficient force to compress the energy absorbing steering column 2.5" (shear capsule separation). The air bag was successful in providing a sufficient ride down to the driver and prevented him from further injury (thoracic, facial and head). The driver's right forearm sustained a fracture (AIS-3) from loading the steering wheel rim and/or the upper instrument panel.

The right front passenger of the Dodge Dynasty was a 16-year-old female, 62" tall, with a weight of 100 lbs. She was not wearing the available 3-point lap and shoulder belt system. At impact, the right front occupant moved forward and loaded the glove box door with both knees, deforming the door to a depth of 4". Her chest contacted the right upper and mid instrument panel which compressed the padded component to a depth of .75" over a 6.5" area. Her head struck the right upper A-pillar (scuff) and the upper right quadrant of the windshield. Hair and tissue transfers evidenced the windshield contact. The passenger sustained a basilar skull fracture (AIS-3) and a closed head injury (AIS-5).

The unrestrained female driver of the S-10 Blazer loaded the lower instrument panel with her knees and the steering assembly with her face and thoracic areas. As a result of the column loading, she sustained fatal injuries.

The air bag in the Dodge Dynasty was tethered and measured approximately 23" in diameter. The maximum depth of the bag was 8-9". The bag was vented by two venting ports located at the 3 and 9 o'clock positions. There was no generant residue in the area of the venting ports. The air bag was intact with no damage to the bag material.

Accident Schematic  
Calspan Case No. 90-14



Paved/Gravel Shoulder

Paved Shoulder

2  
▽



2  
▽

N/C  
▽

2  
▽

N/C  
▽

-2%



N/C  
▽

2  
▽





CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 90-14

FLEET - 1990 DODGE DYNASTY (TRAVELERS INSURANCE)  
LOCATION - [REDACTED], CT

ACCIDENT DATA

Location: Rural two-lane roadway  
City/Township: [REDACTED], CT  
Area/Type: Rural/Residential  
Accident Date/Time: [REDACTED] 1990, [REDACTED] hours  
Investigating Police Agency: [REDACTED], CT Police Department  
Accident Type: Car/Utility vehicle, head-on impact configuration  
Air Bag Vehicle Driver - Serious (AIS-3)  
Occupant Injury Severity: Passenger - Critical (AIS-5)

AMBIENCE

Viewing Conditions: Daylight  
Weather: Clear  
Precipitation: None  
Road Surface: Dry

HIGHWAY

Type: Rural county road  
Number of Lanes: 2  
Width: 20'7"  
Surface: Asphalt  
Median: None  
Edge: East edge - 1'4" paved shoulder  
West edge - 2' paved shoulder

HIGHWAY (CONT'D.)

Vertical Alignment:	Hillcrest
Horizontal Alignment:	Straight
Estimated Coefficient of Friction:	.65
Traffic Density:	Moderate

TRAFFIC CONTROLS

Signals:	None
Signs:	None
Markings:	Yellow full barrier centerlines, solid white edgelines
Speed Limit:	35 mph

VEHICLES

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Description:	1990 Dodge Dynasty LE, 4 dr. sedan	1988 Chevrolet S-10 Blazer, 4X4
V.I.N.:	1B3XC56R7LD	1GNCT18R55J0 (production number deleted)
Color:	Burgundy	Bronze
Odometer:	5,875 miles	Unknown, over 100,000 miles
Engine:	V-6, 3.3 liter	V-6, 2.8 liter
Transmission:	Automatic, column mounted transmission selector lever	5-speed manual, floor mounted transmission selector lever
Steering:	Power	Power
Brakes:	Power	Power front disc

## VEHICLES (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Padding:	Upper, mid, and lower instrument panel, knee bolster, soft edged steering wheel rim, air bag module cover, door panels, door armrests, fold-down center armrest, adjustable head restraints	Upper and mid instrument panel, soft edged steering wheel rim, door panels, door armrests, integral head restraints
Active Restraints:	3-point lap and shoulder belts in the four outboard seated positions, center front and center rear lap belts	3-point lap and shoulder belts in the left front and right front seated positions, 2 rear seat lap belts
Passive Restraints:	Driver's side air bag system that deployed as a result of the head-on impact sequence with vehicle #2	None
Defects:	None	None
Tow Status:	Towed due to damage	Towed due to damage

## VEHICLE DAMAGE

Exterior:	<p>The Dodge Dynasty sustained severe frontal damage from its head-on impact sequence with vehicle #2. Maximum crush was 36.25" located on the front bumper 13.5" right of center. Direct contact damage was 53.5" which extended across the entire frontal area. Crush values at bumper level were as follows: C<sub>1</sub>=23.1", C<sub>2</sub>=25.8", C<sub>3</sub>=27.5", C<sub>4</sub>=30.3", C<sub>5</sub>=34.3", C<sub>6</sub>=31.5".</p> <p>The left wheelbase was reduced by 6.6" while the right wheelbase was decreased by 9.8".</p> <p>The impact displaced the A-pillars rearward which jammed the front doors against the B-pillars. Induced buckling of the sills and roof side rails jammed the rear doors against the C-pillars. Rescue personnel forced open all doors and partially cut the windshield</p>	<p>The frontal area of the 1988 Chevrolet S-10 Blazer sustained severe damage from the head-on impact sequence with the air bag vehicle. Maximum crush was 35.25" located at the left corner of the front bumper. Direct contact damage extended across the entire width of the front bumper and was 56" in length. Crush values at bumper level were as follows: C<sub>1</sub>=35.25", C<sub>2</sub>=33.0", C<sub>3</sub>=26.6", C<sub>4</sub>=19.75", C<sub>5</sub>=15.5", C<sub>6</sub>=13.6".</p> <p>The wheelbases were reduced by 17" on the left side and 3.75" on the right. Components damaged by the impact included the front bumper, both front frame rails, grille, headlight assemblies, radiator supports, hood, and both front fenders. The impact displaced</p>
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VEHICLE DAMAGE (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Exterior (Cont'd.):	from the vehicle to provide greater access to the occupant. They also cut the upper A-pillar but did not remove the roof of the vehicle.  Damaged components included the front bumper, front uni-body structure, grille, header panel, both front fenders and hood.	the left A-pillar rearward which compressed and jammed the left door against the B-pillar.
CDC:	12-FDEW-4	12-FDEW-4
Repair Cost:	Total loss	Total loss
Interior (Air Bag Vehicle):	<p>The interior of the Dodge Dynasty sustained severe damage from both exterior deformation and occupant contact. Maximum intrusion involved 10" of displacement of the right toe pan. The right A-pillar and instrument panel were displaced 8" rearward while the left A-pillar and instrument panel were displaced 4". The knee bolster also intruded into the driver compartment 4.5".</p> <p>The driver loaded the deployed air bag and steering assembly with sufficient force to compress the energy absorbing steering column 2.5" (shear capsule separation). His left hand scuffed (tissue transfer) the steering wheel rim at the 10 o'clock position as he attempted to brace against the wheel. The driver's knees loaded the intruding knee bolster. His left knee scuffed the bolster 19.5 - 24.5" left of center and 14 - 19" below the top surface of the instrument panel. The knee loading cracked the left quarter of the styrofoam backer panel. His right knee impacted the bolster 9 - 12.5" left of center and 14.5 - 20" below the upper instrument panel. Bone fragments penetrated the plastic face of the bolster and the styrofoam backer extending into the plastic reinforcement panel located behind the bolster.</p> <p>The unrestrained right front occupant moved forward and contacted the glove-box door with both knees. The left knee scuffed the door 9 - 11.5" right of center and 14 - 17" below the upper panel. The right knee scuffed the door 12.5 - 14" right of center and 11.5 - 15.5" below the horizontal reference line. The knee loading crushed the door to a depth of 4" and partially separated the door from the left side of the hinge. The passenger's left foot scuffed the heater duct 8 - 15" left of center and 18 - 22" below the upper panel. Her thoracic area contacted the upper right instrument panel at the air vent. The contact was located 14 - 20.5" right</p>	

## VEHICLE DAMAGE (CONT'D.)

Interior of center and involved a 6.5" diameter area of depression  
(Air Bag with a maximum depth of .75". The passenger's head and  
Vehicle) face struck the right A-pillar (scuff mark) and windshield.  
(Cont'd.): Hair and tissue deposits were noted to the windshield  
2.5 - 4" inboard of the pillar and 5 - 17" below the windshield  
header. There was also a U-shaped tear of the plastic laminate  
at the lower portion of the tissue deposit.

## VEHICLE VELOCITY ESTIMATES

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Travel Speed:	40 mph	45-50 mph
Impact Speed:	36.8 mph	45.2 mph
Total $\Delta V$ :	41.7 mph	40.7 mph
Longitudinal $\Delta V$ :	-41.3 mph	-40.6 mph
Lateral $\Delta V$ :	- 5.5 mph	+ 3.2 mph

Impact speeds and delta Vs were computed by the damage and trajectory algorithm of the CRASHPC program.

## COLLISION SEQUENCE

Pre-Crash: The 1990 Dodge Dynasty was traveling in a southerly direction at a driver estimated speed of 40 mph. As the vehicle approached the accident scene, it ascended a grade of approximately 7% that crested at the impending point of impact.

Vehicle #2 was traveling in a northerly direction on the two lane roadway. The driver of the Chevrolet Blazer initiated a passing maneuver in a marked no passing zone and attempted to overtake several slower moving vehicles. Witnesses and police estimated her travel speed at 40-45 mph. The driver, who was apparently familiar with the roadway, continued to pass in the southbound lane as she approached the hillcrest. The hillcrest obscured the driver's view of approaching traffic.

The driver of the S-10 Blazer noted the Dodge Dynasty as it crested the hill. She applied a clockwise steering input and braked in an attempt to avoid impact. The left side tires of the S-10 Blazer deposited 40'8" of rotating tire scuffs as the vehicle yawed 5° CW along its trajectory to impact.

## COLLISION SEQUENCE (CONT'D.)

Crash: The vehicles impacted in a head-on configuration in the south-bound travel lane approximately 50' south of the hillcrest. Impact speeds were computed at 36.8 mph for the air bag vehicle and 45.2 mph for vehicle #2 by the damage and trajectory mode of the CRASHPC program. Both vehicles sustained impact forces that were within the 12 o'clock sector with velocity changes of 41.7 mph for the air bag vehicle and 40.7 mph for the S-10 Blazer. As a result of the crash, the Dynasty's driver air bag system deployed.

The momentum of the S-10 Blazer at impact stopped the forward trajectory of the Dodge Dynasty and displaced it rearward 2'6" and approximately 4' laterally.

The Dynasty rotated 18° in a counterclockwise direction before coming to rest straddling the center lines of the roadway. Vehicle #2 was displaced laterally to its right before coming to rest in the northbound travel lane.

### Post-Crash:

Final Rest - The Dodge Dynasty came to rest facing in a southerly direction. Vehicle #2 rotated approximately 110° in a clockwise direction before coming to rest facing in a northeasterly direction.

Driver Activities - Both drivers sustained incapacitating injuries and remained in their vehicles following the crash. They were removed by rescue personnel and transported to [REDACTED]. The driver of the air bag vehicle was admitted for treatment of his injury. The driver of vehicle #2 expired on arrival.

Police Activities - Numerous police units from the [REDACTED] Police Department responded to the accident scene to assist in the investigation and traffic control.

Rescue Activities - Three rescue squads were called to the scene to provide emergency treatment and transport the injured occupants. The right front passenger of the Dodge was transported by ambulance to a [REDACTED] then transferred by helicopter to a trauma center.

Scene Clearance - Following the on-scene police investigation, both vehicles were towed from the scene.

## HUMAN FACTORS/OCCUPANT DATA

### Air Bag Vehicle

Driver:	43 year old male
Height:	68"
Weight:	175 lbs.
Occupation:	Insurance manager
Active Restraint System Usage:	None, 3-point lap and shoulder belt was available
Usage Source:	Vehicle inspection, police report
Eyeglasses:	None
Vehicle Familiarity:	Unknown
Route Familiarity:	Very familiar with roadway
Trip Plan:	Returning to residence
Manner of Leaving Scene:	Ambulance
Type of Medical Treatment:	Transported to a [REDACTED], then transferred by helicopter to a major [REDACTED] where he was admitted for treatment of his injuries

## DRIVER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Multiple displaced fractures of the right femur	Serious (TRFS-3)	Energy transmittal from knee bolster loading
Fracture/dislocation of the right ankle	Serious (QRZJ-3)	Intruding toe pan
Displaced fracture of the right radius and ulna	Serious (RRFS-3, RRFS-3)	Steering wheel rim and/or instrument panel contact
Open, grossly comminuted, fragmented fracture of the right patella	Moderate (KRFS-2)	Knee bolster
Fracture of the right heel	Moderate (QRFS-2)	Intruding toe/floor pan
Fracture of the left ankle	Moderate (QLFS-2)	Intruding toe pan
Fracture of the right acetabulum	Moderate (PRFS-2)	Energy transmitted from knee bolster loading

## DRIVER KINEMATICS

The driver of the Dodge Dynasty was in a normal seated position at impact with his seat adjusted to a middle position. He was not wearing the active 3-point lap and shoulder belt system. At impact, the driver initiated a forward trajectory in response to the 12 o'clock impact force. His face and torso loaded the deployed air bag which prevented those body areas from injury; however, his loading force was transmitted through the bag and into the steering column. His loading force compressed the energy absorbing column 2.5" (shear capsule separation). The driver probably attempted to brace against the steering wheel with both hands. His left hand deposited a tissue transfer on the steering wheel rim at the 10 o'clock position. The contact point did not result in injury. The driver's right hand probably braced against the steering wheel at the 2 o'clock position. Although no contact evidence was visible, the bracing action and probable subsequent contact with the center instrument panel area resulted in a displaced fracture of his right radius and ulna.

The driver's right knee loaded the intruding knee bolster 9 - 12.5" left of center. The contact resulted in an open, grossly comminuted, fragmented fracture of the right patella. Bone fragments from the patella penetrated the rigid exterior face of the bolster and continued through the styrofoam backer. Bone also penetrated into the subpanel that reinforced the bolster assembly. The energy from the bolster contact was transmitted into his right femur which resulted in multiple displaced fractures of the femur and a fractured right acetabulum. His left knee scuffed the bolster 19.5 - 24.5" left of center, however no injury occurred.

The driver sustained a fracture of the left ankle and a dislocation fracture of the right ankle from contact with the intruding toe pan. The brake pedal may have contributed to the right ankle fracture. He also sustained a fracture of his right heel that resulted from the toe/floor pan intrusion.

The driver rebounded into the left front seat back where he came to rest. He was removed from the vehicle by rescue personnel and transported to a [REDACTED]. He was subsequently transferred to a major medical center where he was admitted for treatment of his injuries.

## PASSENGER DATA

Age:	16 year old
Sex:	Female
Height:	62"
Weight:	100 lbs.
Seated Position:	Right front
Active Restraint System Usage:	None, 3-point lap and shoulder belt was available
Usage Source:	Vehicle inspection, police report



#### PASSENGER DATA (CONT'D.)

Manner of Leaving Scene: Helicopter

Type of Medical Treatment: Patient was airlifted to a major [REDACTED] center where she was admitted for treatment of her injuries

#### PASSENGER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Closed head injury with prolonged loss of consciousness, unresponsive to pain stimuli	Critical (HWKB-5)	Right upper A-pillar
Basilar skull fracture	Serious (HIFS-3)	Right upper A-pillar
Multiple facial lacerations and abrasions	Minor (FWLI-1, FWAI-1)	Windshield
Large contusion of the right forehead	Minor (FSCI-1)	Right upper A-pillar

#### PASSENGER KINEMATICS

The right front passenger of the Dodge Dynasty was not wearing the active 3-point lap and shoulder belt system. At impact she moved forward and slightly to the right with respect to the vehicle as the vehicle rotated in a counterclockwise direction. Her knees loaded the intruding glove box door which scuffed the door and deformed it to a depth of 4". The passenger's left foot scuffed the intruding heater duct 8 - 15" left of center. Her upper thoracic area impacted the right side of the upper and mid instrument panel area, deforming the padded panel 0.75" in depth over a 6.5" diameter area that involved the air conditioning vent. The passenger's facial area impacted the upper A-pillar and the right side of the windshield. A scuff mark evidenced the pillar contact and tissue and hair deposits were noted to the cracked windshield 2.5 - 4" inboard of the A-pillar. As a result of the facial contacts, the passenger sustained a contusion of the right forehead, multiple abrasions and lacerations of the face, and a basilar skull fracture with a closed head injury. Although her medical records were not available, she reportedly sustained prolonged loss of consciousness and was unresponsive to pain stimuli. The right front passenger came to rest slumped against the instrument panel. She was transported by helicopter to a major medical center where she was admitted for treatment of her injuries.

The right front passenger has fully recovered from her injuries.

## HUMAN FACTORS/OCCUPANT DATA

### Vehicle #2

Driver: 27 year old female  
Height: 62"  
Weight: 110 lbs.  
Active Restraint System Usage: None, 3-point lap and shoulder belt was available  
Usage Source: Vehicle inspection  
Manner of Leaving Scene: Helicopter  
Type of Medical Treatment: Transported to a major medical center where she expired at [REDACTED] hours

### DRIVER #2 INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Multiple blunt traumatic injuries of the head and chest	Unknown	Steering assembly

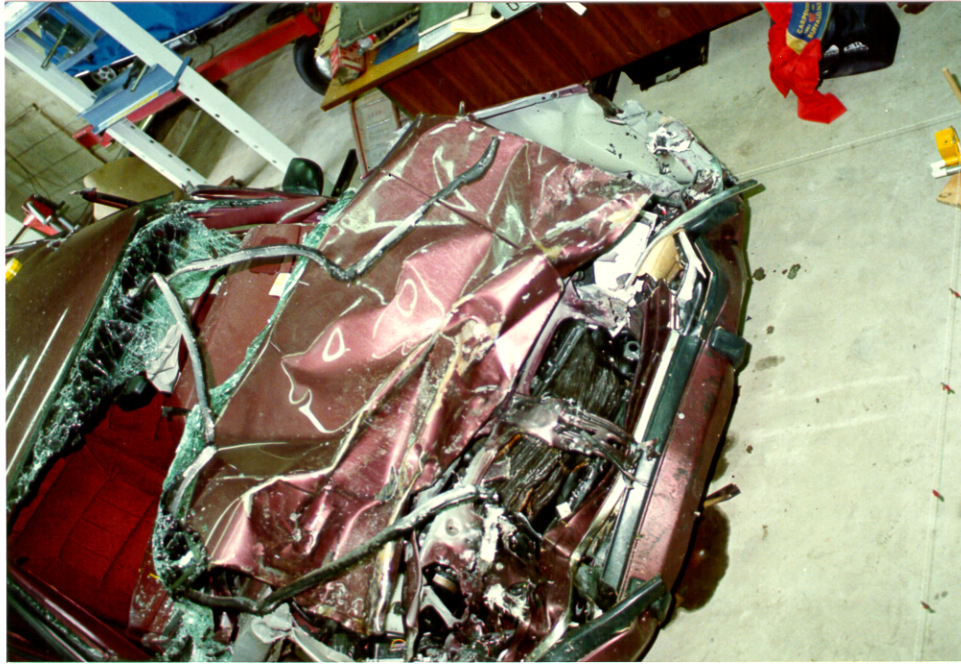
### AIR BAG SYSTEM

The 1990 Dodge Dynasty was equipped with a supplemental driver air bag system that deployed as a result of the head-on impact sequence. The air bag was tethered and measured approximately 23" in diameter (deflated). The air bag was vented by two ports located on the module side of the bag (away from driver) at the 3 and 9 o'clock positions. There was no generant residue in the area of the venting ports. The air bag was intact with no damage to the bag material.



Frontal Views Of The Dodge Dynasty



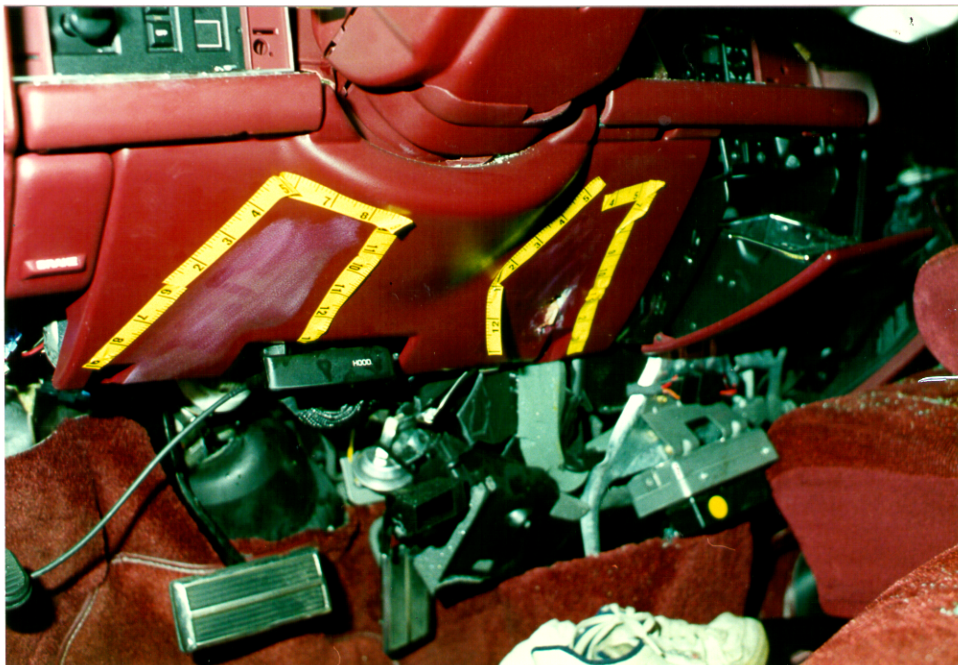


Overhead View Showing The Extent Of Crush



Overall View Of The Deployed Air Bag And Driver Knee Contacts





Driver Knee Contacts To The Knee Bolster



Right Front Passenger Contact Points





Passenger Head And Face  
Contacts To The Right  
A-Pillar and Windshield







Passenger Knee Contacts To The Glove Box Door

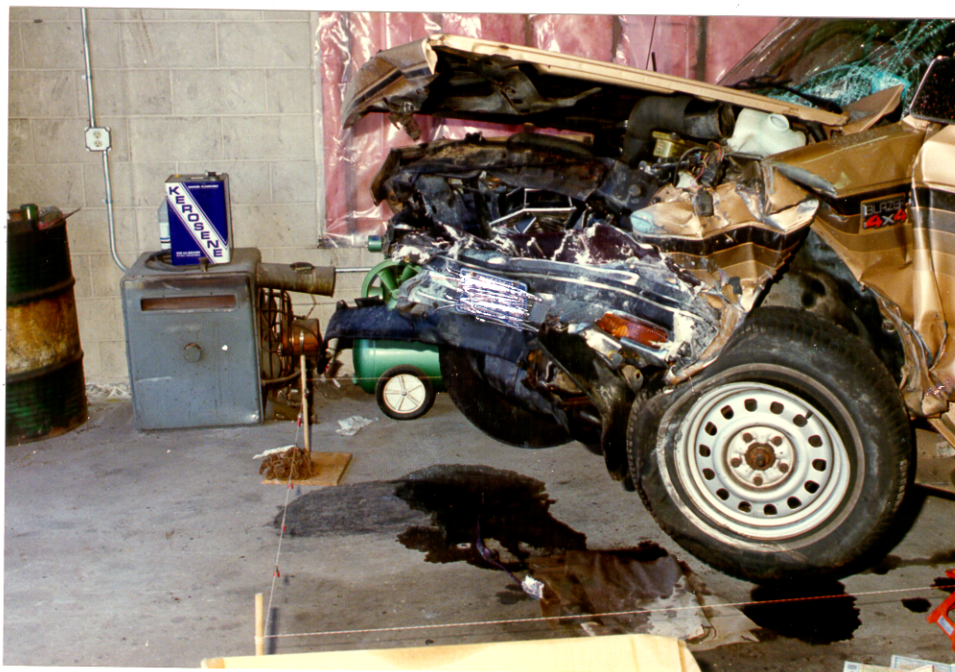


Frontal View Of Vehicle #2





Left Front Three-Quarter View



Perpendicular View Of The Left Front Corner Showing The Extent of Crush

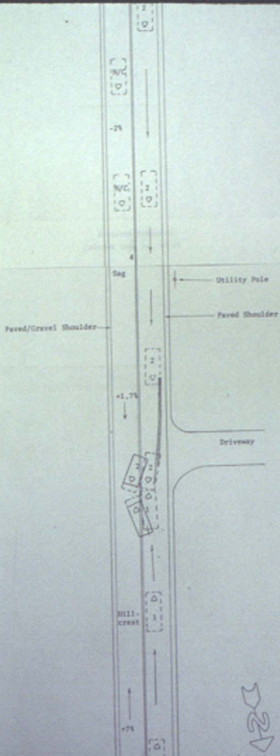


## SLIDE INDEX

<u>Slide No(s).</u>	<u>Description</u>
1	Accident schematic
2	Driver injury mannequin
3	Passenger injury mannequin
4-9	Pre-crash trajectory of the Dodge Dynasty
10	Point of impact
11	Post-crash spinout to final rest
12	Lookback view of vehicle's trajectory
13-17	Pre-crash trajectory of vehicle #2
18	Left side tire scuffs from vehicle #2
19	Vehicle #2 rotates in a clockwise direction to impact
20	Point of impact
21	Final rest position of vehicle #2
22	Lookback view of vehicle #2's trajectory
23,24	Frontal views of the Dodge Dynasty
25-27	Overhead views showing the extent of crush
28,29	Left front three-quarter views
30	Perpendicular view of the left frontal area showing the extent of crush
31-33	Left side views of the Dodge
34,35	Right rear three-quarter views
36	Overall interior view from the left door area
37-40	Driver knee contacts to the knee bolster
41	Bone fragments penetrated knee bolster from right knee contact
42,43	Bone fragments penetrated styrofoam backing on bolster
44	Bone fragments penetrated reinforcement panel

SLIDE INDEX (CONT'D.)

<u>Slide No(s).</u>	<u>Description</u>
45	Left toe pan intrusion
46	Deployed driver air bag
47	Air bag tether strap
48	Steering column shear capsule separation
49	Left hand scuff on steering wheel rim
50	Driver's seat
51	Manufacturer's label on left front door
52,53	Angular views of the steering column and deployed air bag
54	Passenger contact to instrument panel and glove box area
55,56	Head contact to right A-pillar
57	Windshield bond separation at upper right A-pillar area
58,59	Passenger head/facial contact to windshield
60	Windshield bond separation at right upper A-pillar
61	Passenger contact to upper instrument panel
62,63	Knee/leg contact to glove box door
64	Passenger's seat
65	Frontal view of vehicle #2
66	Left front three-quarter view
67	Perpendicular view of the left front corner showing the extent of crush
68	Left side view
69	Left rear three-quarter view
70	Longitudinal view of the right side area
71,72	Interior contact points from the unrestrained driver of vehicle #2



122

AGE 43  
SEX Male  
WT. 175 lbs.  
HT. 68"

Displaced fracture of the right radius and ulna (AIS-3), steering wheel and/or center instrument panel contact

Fractured right acetabulum (AIS-2), induced fracture from knee bolster contact

Multiple displaced fractures of the right femur (AIS-3), induced fracture from knee bolster contact

Open, grossly comminuted, fragmented fracture of the right patella (AIS-2), knee bolster

Fracture/dislocation of the right ankle (AIS-3), intruding toe pan

Fracture of the left ankle (AIS-2), intruding toe pan

Fracture of the right heel (QRFS-2), intruding toe/floor pan

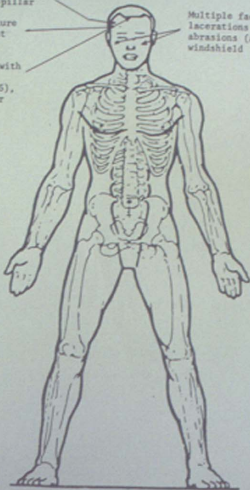
Large contusion of the  
right forehead (AIS-1),  
upper right A-pillar

Basilar skull fracture  
(AIS-3), upper right  
A-pillar contact

Closed head injury with  
prolonged loss of  
consciousness (AIS-5),  
upper right A-pillar

Multiple facial  
lacerations and  
abrasions (AIS-1),  
windshield

AGE 16  
SEX Female  
WT. 100 lb  
HT. 64"

































150'









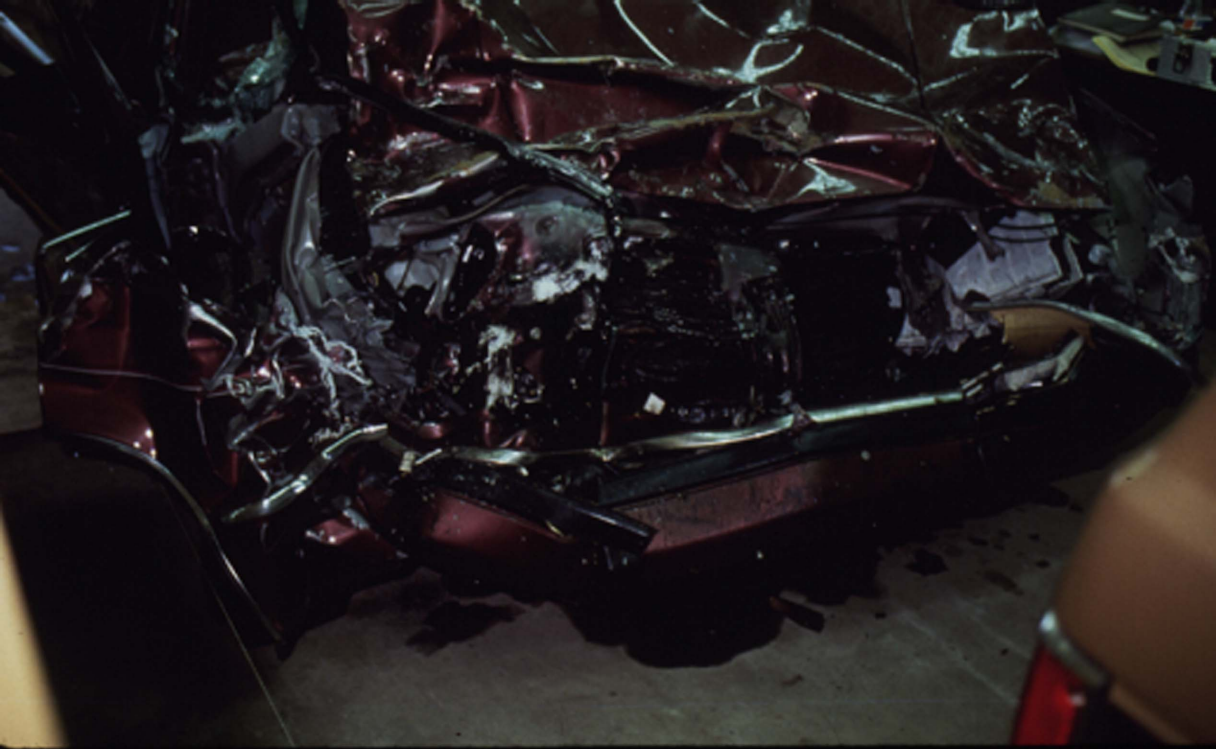




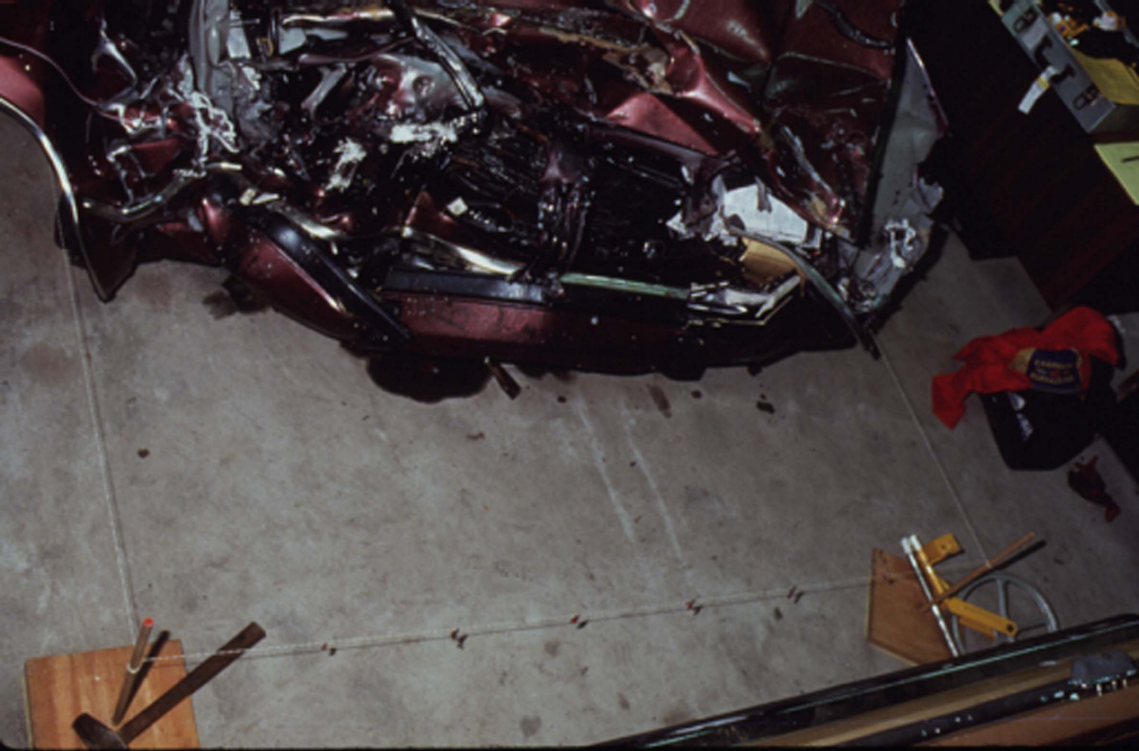




































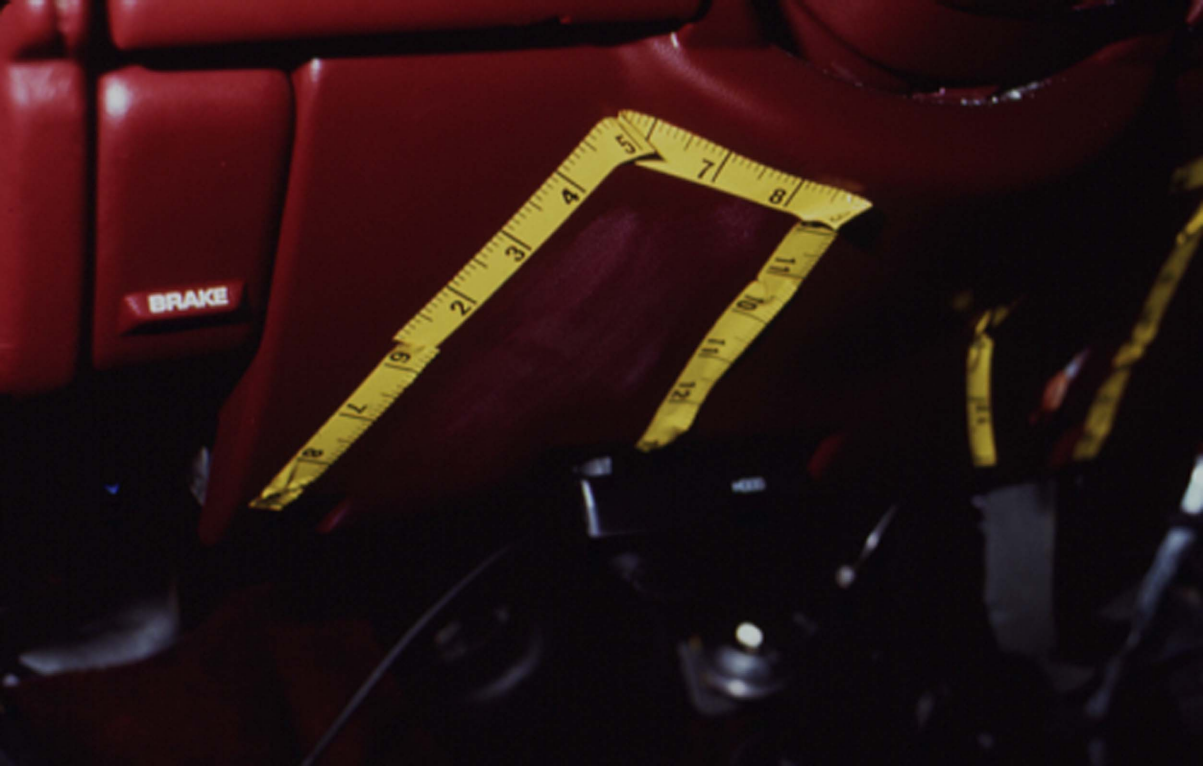


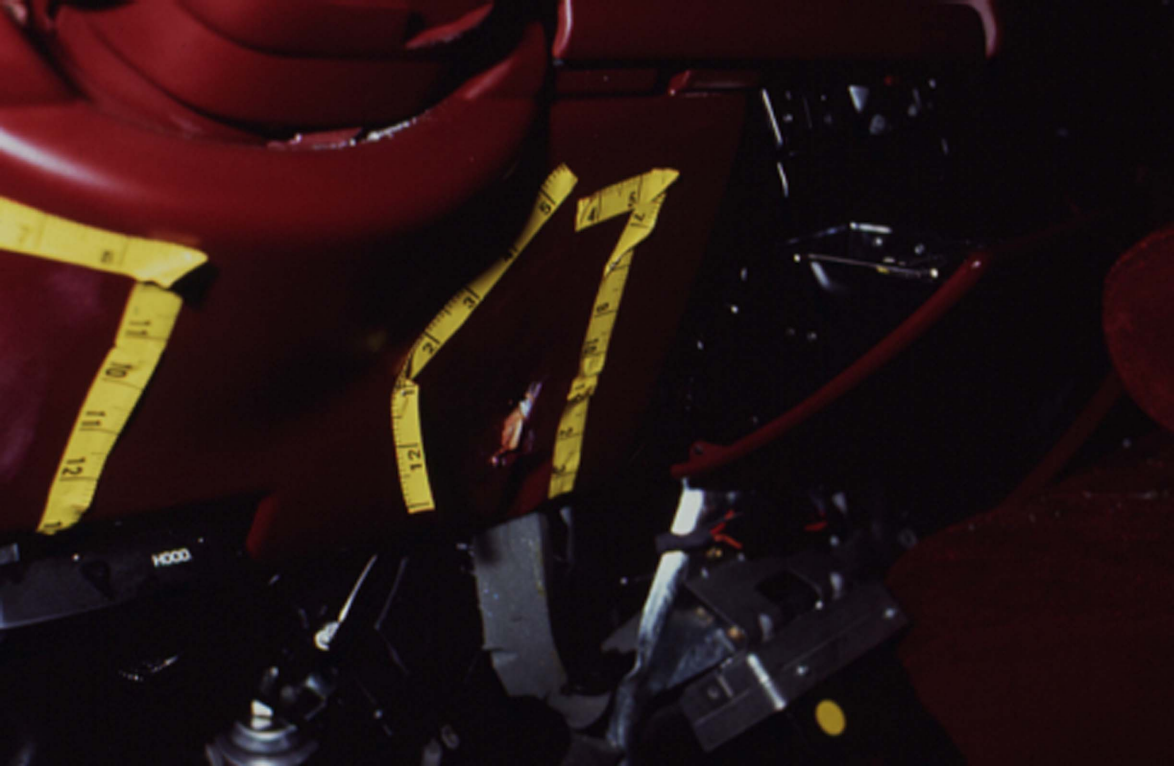






BRAKE



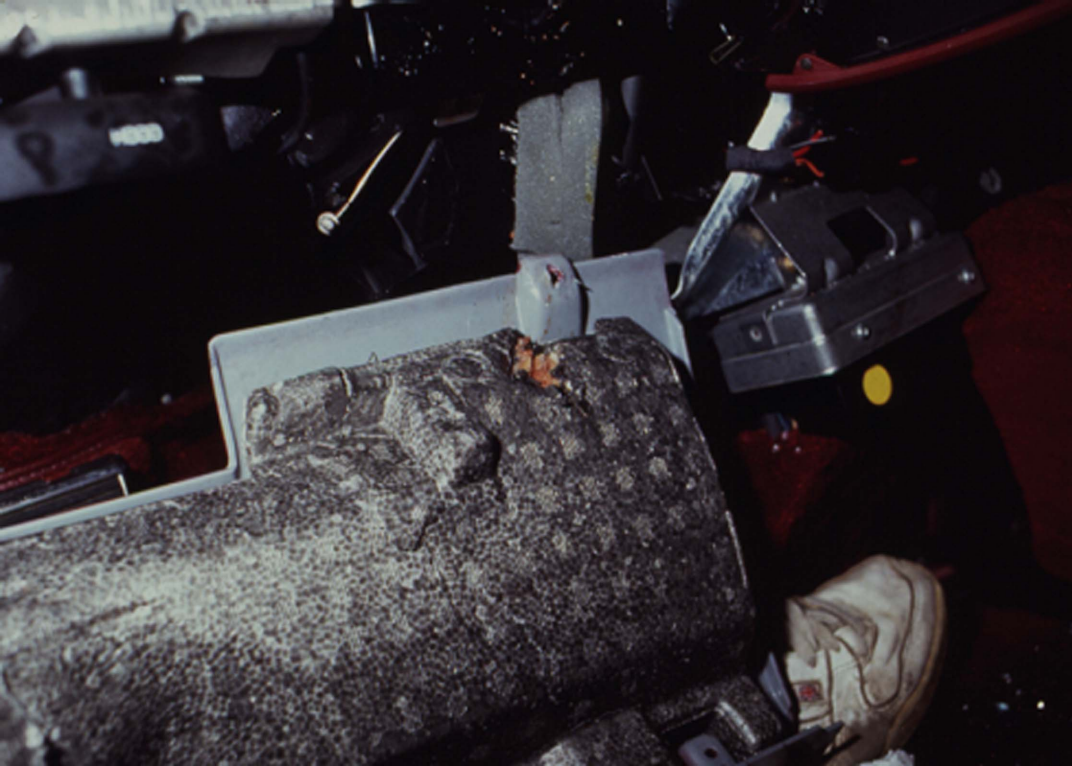


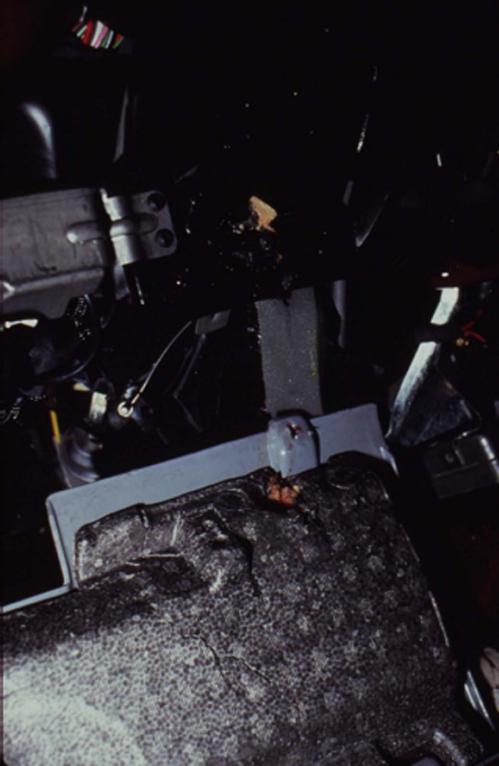




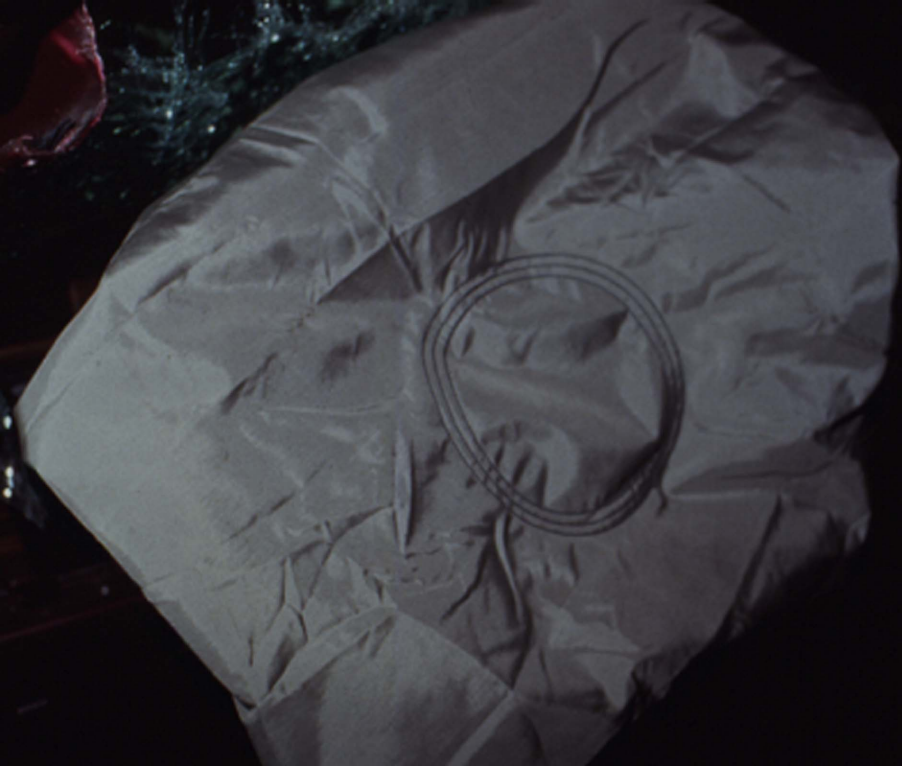






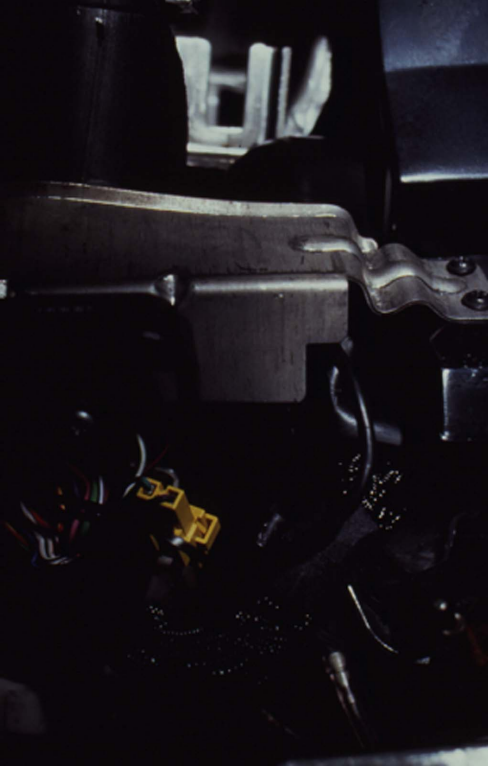






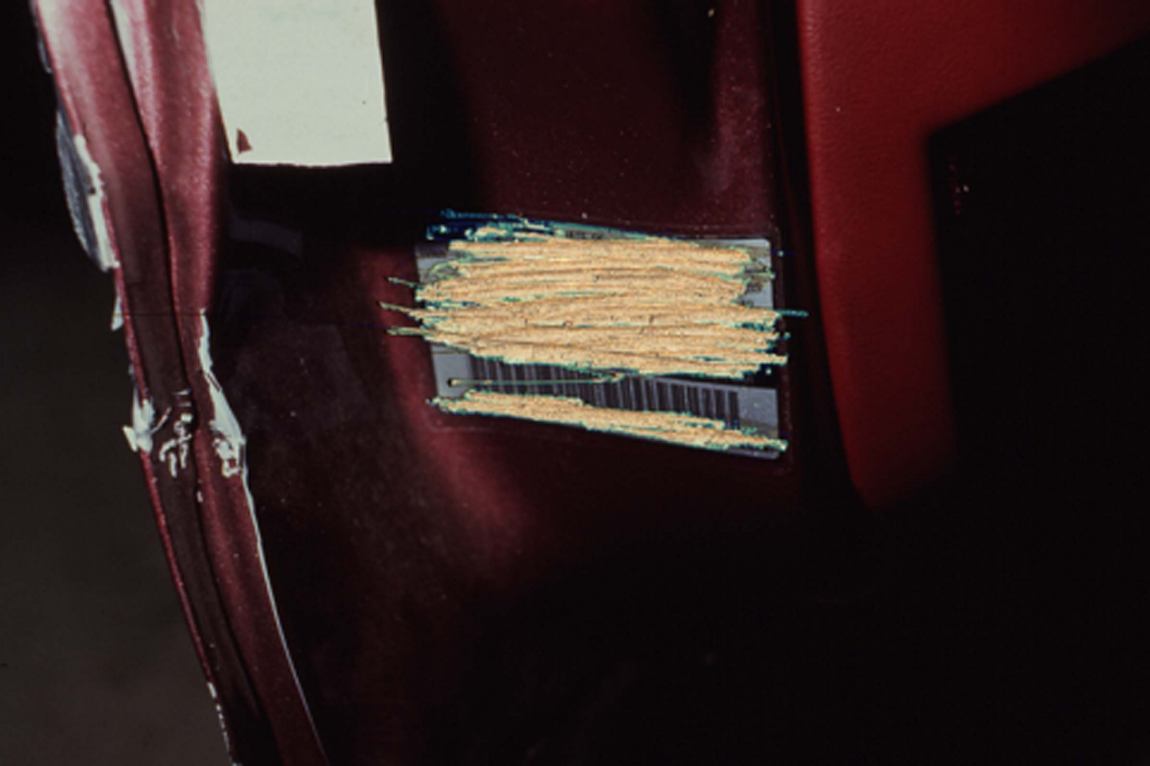


















































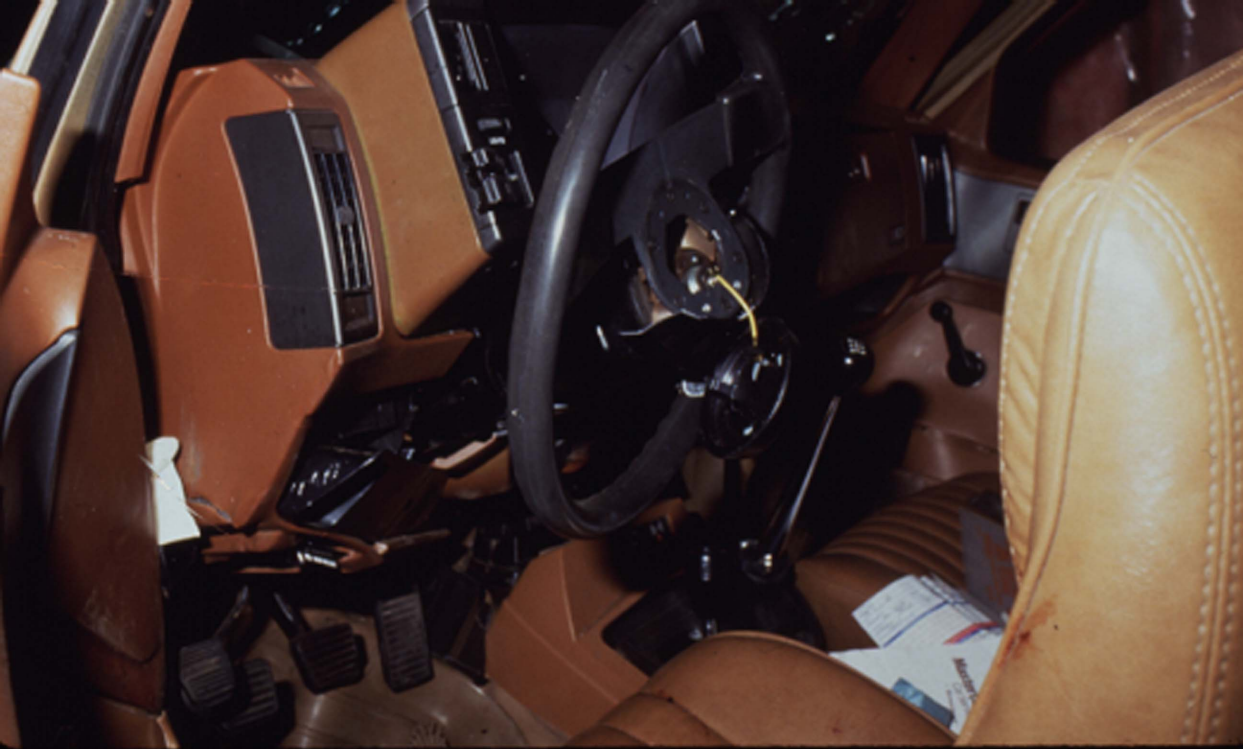














APPENDIX A

Police Accident Report

## POLICE ACCIDENT REPORT

R-1 Rev 6-85

MVD USE ONLY	CHECKED BY	LOW LETTER
--------------------	------------	------------

Please send to

STATE OF CONNECTICUT  
DEPARTMENT OF MOTOR VEHICLES  
Accident Security Unit

BEST AVAILABLE COPY

1-6 MVD CASE NUMBER

DOT  
ONLY  
13

1540

A

1549

B

6

C

D  
1

E

F  
1

G

H  
1I  
23

J

K  
23

L

M  
03

N

O  
23

P

Q  
01

R

S  
08

T

LOCATION

7-12 DATE OF ACCIDENT (month) (day) (year) 9 0	DAY OF WEEK	13-16 TIME (military)	# KILLED 1	# INJURED 2	# OF VEHICLES INVOLVED 2	POLICE CASE NUMBER
17-19 CITY OR TOWN (name) (City/Town Code) Road		ACCIDENT OCCURRED ON (street name or route #) AT ITS INTERSECTION WITH (street name or route #1)				
IF NOT AT INTERSECTION						
1. Give distance and ✓ either "Feet" or "Tenths" of a mile. 358 <input checked="" type="checkbox"/> Feet <input type="checkbox"/> Tenths		2. Check (✓) direction. North <input checked="" type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W		3. Give nearest intersecting street (name or route #) underpass, overpass, bridge, river or town line. DO NOT USE house #, utility pole #, or business name. Road		

## OPERATOR AND VEHICLE #1

OPERATOR #1 NAME (last, first, middle initial)			
ADDRESS (street number and name)			
CITY OR TOWN	STATE	ZIP CODE	20 SEX M
06			
24-48 OPERATOR LICENSE NUMBER	49-54 DATE OF BIRTH	DOT ONLY 1	
VEHICLE #1 OWNER NAME (if same as operator #1, enter "same") Chrysler Corporation			
ADDRESS (street number and name)			
CITY OR TOWN	STATE	ZIP CODE	
	MI		
40-41 PLATE # AND STATE CODE	VEHICLE YEAR AND MAKE		
06	1990 Dodge		
VEHICLE MODEL NAME	BODY TYPE (e.g. 4-door sedan, truck, etc.)		
Dynasty	4-door sedan		
44-61 VEHICLE IDENTIFICATION NUMBER (not engine number)	DOT ONLY 2		
1B3XC56R7			
Did operator carry a current Connecticut No-Fault Insurance I.D. Card in vehicle as required under CGS, Section 14-12b <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
NAME OF AUTOMOBILE INSURANCE CO.		AUTOMOBILE INSURANCE POLICY NO.	
PARTS OF VEHICLE DAMAGED (i.e. left front fender, etc.) Total - mostly front end			
VEHICLE #1 TOWED TO (if not towed, indicate "none") CT			

## OPERATOR AND VEHICLE #2 (or pedestrian)

OPERATOR #2 OR PEDESTRIAN NAME (last, first, middle initial)			
ADDRESS (street number and name)			
CITY OR TOWN	STATE	ZIP CODE	21 SEX F
	CT		
2	06		
9-33 OPERATOR LICENSE NUMBER	34-39 DATE OF BIRTH		
VEHICLE #2 OWNER NAME (if same as operator #2, enter "same") Same			
ADDRESS (street number and name)			
Same			
CITY OR TOWN	STATE	ZIP CODE	
42-43 PLATE # AND STATE CODE	VEHICLE YEAR AND MAKE		
	1988 Chevy		
VEHICLE MODEL NAME	BODY TYPE (e.g. 4-door sedan, truck, etc.)		
S-10 Blazer	Station Wagon		
7-24 VEHICLE IDENTIFICATION NUMBER (not engine number)			
3	1GNCT18R5J		
Did operator carry a current Connecticut No-Fault Insurance I.D. Card in vehicle as required under CGS, Section 14-12b <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
NAME OF AUTOMOBILE INSURANCE CO.		AUTOMOBILE INSURANCE POLICY NO.	
PARTS OF VEHICLE DAMAGED (i.e. left front fender, etc.) Total - mostly front end			
VEHICLE #2 TOWED TO (if not towed, indicate "none") CT			

DAMAGE TO  
PROPERTY  
OTHER THAN  
INVOLVED  
VEHICLES

1. Describe the property and extent of damage (e.g. 50 feet of fence knocked down)

2. Give name and address of property owner

AGE	SEX	NAME AND ADDRESS OF WITNESS							
35	M								
AGE	SEX	NAME AND ADDRESS OF WITNESS							
J	I	K	L NAME AND ADDRESS (or operator #1, operator #2, etc.)	M	N	O	P	Q	
25	26	27-28	OPERATOR #1	43	M	29	30		1
1	A	01		27	F	35	36		2
31	32	33-34	OPERATOR #2 OR PEDESTRIAN (circle the one which applies)	16	F	41	42		3
2	K	01				47	48		4
37	38	39-40				53	54		5
3	1	A				59	60		6
43	44	45-46				65	66		7
4						71	72		8
49	50	51-52							
5									
55	56	57-58							
6									
61	62	63-64							
7									
67	68	69-70							
8									

## POLICE ACCIDENT REPORT

PR-7 Rev. 5-80

## INSTRUCTIONS

1. Please print or type all responses.
2. Enter code number of correct response in box indicated by arrow (→ or ↓).
3. If correct response is UNKNOWN, enter an X.
4. If question does not apply, enter a dash (-). DO NOT leave blank.
5. Please explain any response marked with an asterisk (\*), in NARRATIVE SECTION.

A  
TIME EMERGENCY  
MEDICAL SERVICE  
NOTIFIED (military)

B  
TIME EMERGENCY  
MEDICAL SERVICE  
ARRIVED (military)

connecticut

## C. TYPE OF EMERGENCY MEDICAL SERVICE (ambulance, etc.—enter one item)

- |                          |                           |                      |            |
|--------------------------|---------------------------|----------------------|------------|
| 1. None                  | 3. Municipal or Volunteer | 5. State or Federal  | 9. Other * |
| 2. Commercial or Private | 4. Hospital based         | 6. Two or more types |            |

## D. WEATHER CONDITIONS (enter one item)

- |            |                 |                           |           |            |
|------------|-----------------|---------------------------|-----------|------------|
| 1. Clear   | 3. Fog          | 5. Snowing                | 7. Cloudy | 9. Other * |
| 2. Raining | 4. Rain and Fog | 6. Sleet or Freezing Rain | 8. Hail   |            |

## E. ROAD SURFACE CONDITIONS (enter one item)

- |        |          |           |                  |            |
|--------|----------|-----------|------------------|------------|
| 1. Dry | 3. Icy   | 5. Slushy | 7. Freshly oiled | 9. Other * |
| 2. Wet | 4. Snowy | 6. Muddy  | 8. Loose sand    |            |

## F. LIGHT CONDITIONS (enter one item)

- |             |                                      |                                       |
|-------------|--------------------------------------|---------------------------------------|
| 1. Daylight | 3. Dusk                              | 5. Darkness with highway illumination |
| 2. Dawn     | 4. Darkness, no highway illumination |                                       |

## G. CONTRIBUTING FACTORS (enter only those which apply, either none (enter a dash (-)), one, or two items for each vehicle)

- |  |                                 |   |            |
|--|---------------------------------|---|------------|
| DRIVER                                 | DRIVER (continued)              | ROADWAY   | Vehicle #1 |
| 01. Speeding                           | 12. Sick                        | 20. Defective roadway surface (i.e. potholes, etc.)                               |            |
| 02. Failed to yield right-of-way       | 13. Alcohol involved            | 21. Slippery roadway surface  | Vehicle #1 |
| 03. Improper passing                   | 14. Inattentive                 | 22. Traffic control signal inoperative  |            |
| 04. Failed to obey traffic control     | 15. Lost control of vehicle *   | 23. View obstructed by object (i.e. tree, fence, shrubbery, parked vehicle, etc.) | Vehicle #2 |
| 05. Followed too closely               | DEFECTIVE EQUIPMENT             | 24. Roadway restricted (i.e. construction, snowbank, etc.)                        |            |
| 06. Made improper turn                 | 16. Brakes                      | MISCELLANEOUS   | Vehicle #2 |
| 07. Made improper lane change          | 17. Tire(s)                     | 25. Pedestrian under the influence of alcohol                                     |            |
| 08. Drove left of center               | 18. Steering or wheel(s)        | 26. Pedestrian inattentive  | Vehicle #2 |
| 09. Drove wrong way on one-way street  | 19. Other defective equipment * | 27. Animal or foreign object in roadway   |            |
| 10. Drove wrong way on divided highway |                                 | 28. Blinded by sun or bad weather   |            |
| 11. Fatigued or asleep                 |                                 | 99. Other *   |            |

## H. VEHICLE TYPE (enter one item for each vehicle)

- |  |  |                                       |            |
|--|--|---------------------------------------|------------|
| 01. Passenger Car                        | 07. Truck or Van—dual tires                | 13. Farm equipment                    |            |
| 02. Motorcycle                           | 08. Truck or Van—single tires              | 14. Train                             | Vehicle #1 |
| 03. Pedalcycle (bicycle, tricycle, etc.) | 09. Car-trailer combination                | 15. Moped (bicycle with helper motor) |            |
| 04. Camper                               | 10. Truck-trailer combination              | 16. Motor Scooter or Mini-bike        | Vehicle #2 |
| 05. Commercial Bus                       | 11. Emergency vehicle (police, fire, etc.) | 17. Snowmobile or Go-cart             |            |
| 06. School Bus                           | 12. Taxi                                   | 18. Tractor-trailer combination       |            |
|  |  | 99. Other *                           |            |

## I. INJURY CODE

- K. Killed.
- A. Disabling—cannot leave scene without assistance (i.e., broken bones, severe cuts, prolonged unconsciousness, etc.).
- B. Not disabling, but visible (i.e., minor cuts, swelling etc.).
- C. Probable but not visible (i.e., complaint of pain, etc.).
- N. No injury.

## O. SAFETY EQUIPMENT USED

- |                          |  |
|--------------------------|--|
| 1. Lap belt only         | 7. Child seat  |
| 2. Lap and shoulder belt | 8. Helmet (motorcyclist)   |
| 3. Passive belt          | 9. Light-reflecting or light-colored clothing (pedestrian or pedalcyclist) |
| 4. Airbag deployed       | 0. None  |
| 5. Airbag failed         |  |
| 6. Child harness         |  |

## P. EJECTED FROM VEHICLE

1. Completely
2. Partially
3. Not ejected

J.  
VEHICLE  
NUMBER  
1. Veh. #1  
2. Veh. #2  
etc.

## K. INDIVIDUAL POSITION CODE

- |                  |                 |                 |                                    |                |
|------------------|-----------------|-----------------|------------------------------------|----------------|
| 01. Operator     | 03. Front-right | 05. Rear-center | 07. Rear of station wagon or truck | 09. Pedestrian |
| 02. Front-center | 04. Rear-left   | 06. Rear-right  | 08. Motorcycle passenger           | 99. Other *    |

N. SEX  
M. Male  
F. Female

M. AGE

Q. HOSPITAL  
CODE  
(see back  
of this  
sheet)

L. NAME AND ADDRESS OF EACH INVOLVED PERSON (or "operator #1", "operator #2", etc.)



PLEASE DRAW A DIAGRAM OF WHAT HAPPENED (be sure to include all vehicle pedestrian and bicyclist maneuvers both prior and after the collision)

**Draw an arrow pointing north in this circle.**



PRIVATE  
DRIVE  
TUNNEL  
ROAD

- GRADE

**PIEDMONT SECTION**

ROAD

NOT TO SCALE

APPROXIMATE  
CREST OF  
KNOLL

SECTION OF TRAVEL OF EACH VEHICLE, PEDESTRIAN, ETC.

VEHICLE #1 going ☐ N ☒ S ☐ E ☐ W on                      ROAD

VEHICLE #2 going ☒ N ☐ S ☐ E ☐ W on                      Road

**PLEASE GIVE A COMPLETE DESCRIPTION OF WHAT HAPPENED (be sure to explain any prior response marked with an asterisk\*)**

Accident occurred on a straight, level section of two-lane roadway at the crest of a knoll; roadway is divided by a double yellow centerline. The road is level; several feet to the North of the accident scene, the road has a moderately steep grade, negative to the North, which creates a knoll; a vehicle travelling Southbound on [REDACTED] Road North of the knoll cannot see or be seen by a vehicle travelling Northbound on [REDACTED] Road, South of the knoll. The non-contact vehicle (CT registration number [REDACTED]) was being driven by the witness.

Vehicle #1 was travelling Southbound on [REDACTED] Road, North of the crest of the knoll. The witness was travelling Northbound on [REDACTED] Road, South of the knoll. He stated that he was being followed closely by Vehicle #2. The witness stated that Vehicle #2 drove into the Southbound lane and began to pass him on his left as they approached the knoll; Vehicle #2 was travelling Northbound in the Southbound lane at this time. The witness saw Vehicle #1 begin to crest the knoll; the witness drove off the right side of the road onto a lawn to allow Vehicle #2 to return to the proper side of the road. Operator #2 steered sharply to the right, but struck Vehicle #1 just after it crested the knoll.

Operator #2 died as a result of injuries sustained in this accident shortly afterward. Operator #1 and his passenger sustained serious injuries:

Operator #2 had consumed alcohol shortly prior to this accident; the medical examiner's report is pending at this time.	Yes	No	Yes
---	-----	----	-----

ime. Yes No Yes No  
WERE MEASUREMENTS TAKEN? ☒ ☐ PHOTOS? ☒ ☐

[illegible]

**DOT  
USE  
ONLY**

## ENVIRONMENTAL ACTION

[illegible]

None

[illegible]

None

[illegible]

None

[illegible]

None

TYPE OF ENFORCEMENT ACTION (✓ one)									
------------------------------------	--	--	--	--	--	--	--	--	--

☐ Arrest ☐ Written Warning ☒ None ☐ Other

STATUTE OR ORDINANCE NUMBER

TYPE OF ENFORCEMENT ACTION (✓ one)	
<input type="checkbox"/> Informal	<input checked="" type="checkbox"/> Formal

☐ Arrest    ☐ Written Warning    ☒ None    ☐ Other

STATUTE OR ORDINANCE NUMBER

COURT DATE AND TOWN CODE	
1	2
3	4
5	6
7	8
9	0
1	2
3	4
5	6
7	8
9	0

M SUMMONS/COMPLAINT NUMBER

COURT DATE AND TOWN CODE	
--------------------------	--

M SUMMONS/COMPLAINT NUMBER

**RANK AND SIGNATURE OF INVESTIGATING OFFICER**

BADGE NUMBER
--------------

DEPARTMENT NAME

PORT DATE

CASE STATUS
-------------

**SUPERVISOR**

**Open    Closed**

[REDACTED]

REDUCED TO 78%

BEST AVAILABLE COPY

PRIVATE DRIVE  
ROAD

CK

CK

CK

ROAD

GRASS LAWN

ROAD

—N→

POLICE CASE  
1990 AT HOURS

INVESTIGATION BY:  
OFFICER

MEASUREMENTS BY:  
OFFICER  
OFFICER

APPROXIMATELY TO SCALE

SCALE IS ONE INCH = TEN FEET

0 10 20

DIAGRAM DEPICTS THE SUSPECTED PATHS OF TRAVEL  
OF THE INVOLVED VEHICLES

## APPENDIX B

### CRASHPC Output

#### Damage and Trajectory Algorithm

# SUMMARY OF CRASHPC RESULTS (USING SPINOUT)

90-14

IMPACT SPEED (LINEAR MOMENTUM AND SPINOUT)		VEH #1	VEH #2	TOTAL (MPH)	LONG. (MPH),	LAT. (MPH)
		VEH #1		36.8	36.8	.0
		VEH #2		45.2	44.5	7.8

SPEED CHANGE (DAMAGE)		VEH #1	VEH #2	TOTAL (MPH)	LONG. (MPH)	LAT. (MPH)	ANG. (DEG)
		VEH #1		42.5	-42.3	-4.1	5.5
		VEH #2		41.5	-41.3	4.7	-6.5

(LINEAR MOMENTUM AND SPINOUT)		VEH #1	VEH #2	TOTAL (MPH)	LONG. (MPH)	LAT. (MPH)	ANG. (DEG)
		VEH #1		40.8	-40.2	-6.8	9.6
		VEH #2		39.8	-39.8	1.6	-2.4

ENERGY DISSIPATED BY DAMAGE VEH#1:145104.6 FT-LB VEH#2:248422.3 FT-LB

## SUMMARY OF DAMAGE DATA VEHICLE # 1

(\* INDICATES DEFAULT VALUE)  
VEHICLE # 2

TYPE-----CATEGORY 3  
 STIFFNESS---CATEGORY 9  
 WEIGHT----- 3267.0 LBS.  
 CDC-----12FDEW4  
 L----- 60.0 IN.  
 C1----- 23.1 IN.  
 C2----- 25.8 IN.  
 C3----- 27.5 IN.  
 C4----- 30.3 IN.  
 C5----- 34.3 IN.  
 C6----- 31.5 IN.  
 D----- .0  
 RHO----- 1.00 \*  
 ANG----- 5.5 DEG.  
 D'----- 1.9 IN.

TYPE-----CATEGORY 2  
 STIFFNESS---CATEGORY 7  
 WEIGHT----- 3342.0 LBS.  
 CDC-----12FDEW4  
 L----- 60.0 IN.  
 C1----- 35.3 IN.  
 C2----- 33.0 IN.  
 C3----- 26.6 IN.  
 C4----- 19.8 IN.  
 C5----- 15.5 IN.  
 C6----- 13.6 IN.  
 D----- .0  
 RHO----- 1.00 \*  
 ANG----- -6.5 DEG.  
 D'----- -5.3 IN.

## SCENE INFORMATION

	VEHICLE # 1	VEHICLE # 2
IMPACT X-POSITION	7.30 FT.	21.40 FT.
IMPACT Y-POSITION	12.70 FT.	13.80 FT.
IMPACT HEADING ANGLE	360.00 DEG.	192.00 DEG.
REST X-POSITION	4.00 FT.	20.80 FT.
REST Y-POSITION	8.80 FT.	7.40 FT.
REST HEADING ANGLE	339.00 DEG.	204.00 DEG.
DIRECTION OF ROTATION	CCW	CW
AMOUNT OF ROTATION	<360	<360

## COLLISION CONDITIONS

VEHICLE # 1	VEHICLE # 2
XC10' = 7.3 FT.	XC20' = 21.4 FT.
YC10' = 12.7 FT.	YC20' = 13.8 FT.
PSI10 = 360.0 DEG.	PSI20 = 192.0 DEG.
PSI1D0 = .0 DEG/SEC	PSI2D0 = .0 DEG/SEC
BETA1 = .0 DEG.	BETA2 = 10.0 DEG.

## SEPARATION CONDITIONS (USING SPINOUT)

VEHICLE # 1	VEHICLE #2
US1 = -3.4 MPH	US2 = 4.7 MPH
VS1 = -6.8 MPH	VS2 = 9.5 MPH
PSISD1 = -34.5 DEG/SEC	PSISD2 = 21.5 DEG/SEC

RELATIVE VELOCITY (LINEAR MOMENTUM)	VEHICLE #1	VEHICLE #2
SPEED ALONG LINE THRU CG:	36.7 MPH	44.1 MPH
SPEED ORTHOG. TO CG LINE:	-2.9 MPH	5.8 MPH
CLOSING VELOCITY (LINEAR MOMENTUM) :	80.9 MPH	

## DIMENSIONS AND INERTIAL PROPERTIES

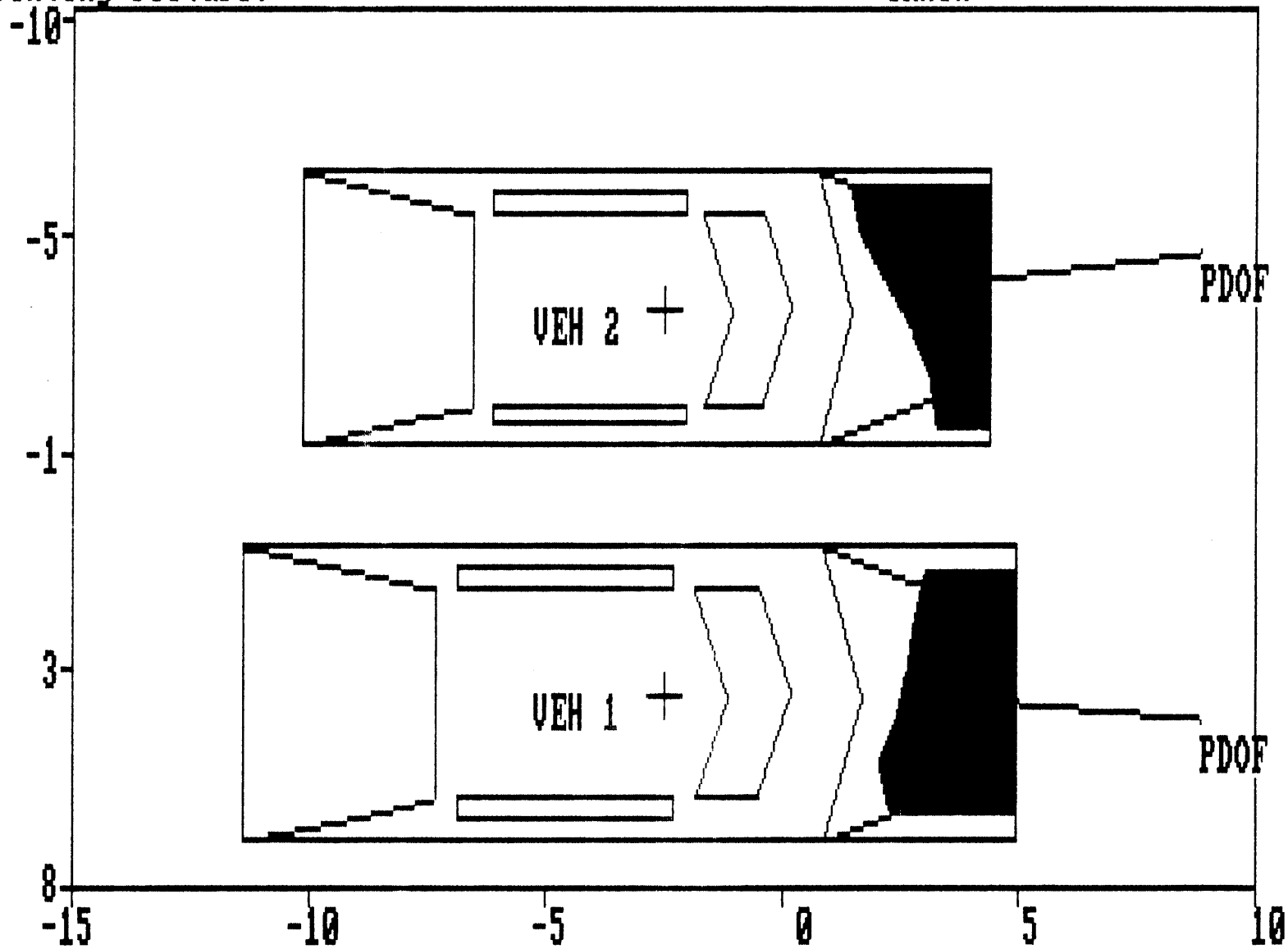
A1 = 51.3 IN.	A2 = 46.3 IN.
B1 = 55.5 IN.	B2 = 50.1 IN.
TR1 = 58.9 IN.	TR2 = 54.6 IN.
I1 = 28235.8 LB-SEC**2-IN	I2 = 25642.9 LB-SEC**2-IN
M1 = 8.495 LB-SEC**2/IN	M2 = 8.690 LB-SEC**2/IN
XF1 = 89.8 IN.	XF2 = 83.3 IN.
XR1 = -106.4 IN.	XR2 = -91.6 IN.
YS1 = 36.3 IN.	YS2 = 33.6 IN.

## ROLLING RESISTANCE

VEHICLE # 1	VEHICLE # 2
LF----- 1.00	LF----- 1.00
RF----- 1.00	RF----- .50
LR----- .15	LR----- .30
RR----- .15	RR----- .30
MU----- .65	

Printing Picture:

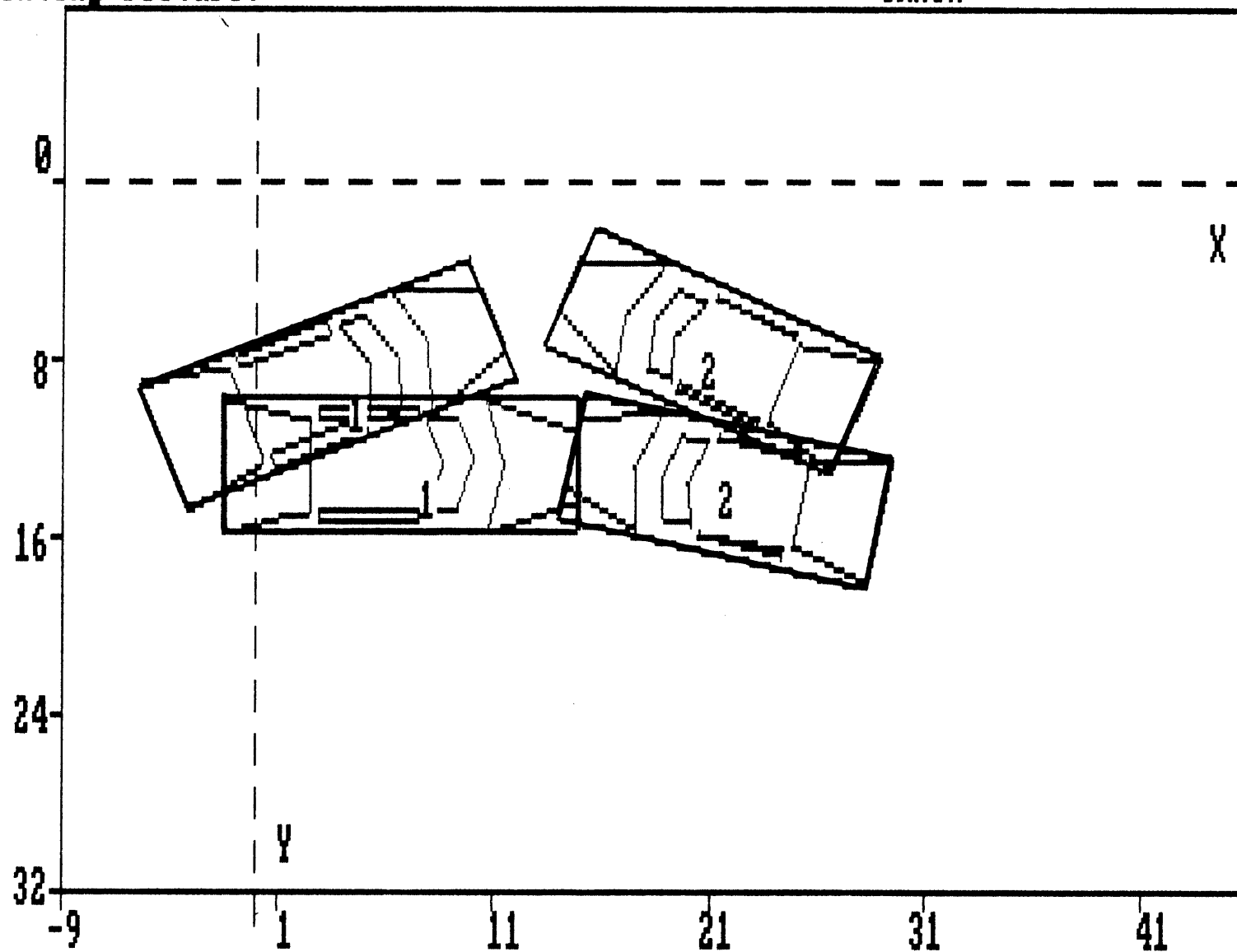
CRASH





Printing Picture:

CRASH



SCENE DESCRIPTION

APPENDIX C

Air Bag Supplement

ACCIDENT SUMMARY

ACCIDENT DATE                      / 90

POLICE INVESTIGATED (1,2,9)\*

                     POLICE DEPT.

City                      County                     

GENERAL LOCALITY

- (1) Freeway, Limited Access
- (2) Urban (City)
- (3) Urban-Rural (mixed)
- (4) Rural, Fields

CONFIGURATION (First Harm)

- (J) Struck Object or Pedestrian
- (1) Rear-End
- (2) Head-On
- (3) Rear-to-Rear
- (4) Angle
- (5) Sideswipe-Same Direction
- (6) Sideswipe-Opposite Direct.
- (7) NonCollision Fell from Veh
- (8) NonImpact Deployment
- (9) Unknown

FIRE INVOLVED (0) None

- (1) AirBag Vehicle
- (2) Other Vehicle
- (3) Both Vehicles
- (9) Unknown

NUMBER: VEHICLES INVOLVED

(8)=8 or more

PERSONS INVOLVED

INJURED PERSONS

MAXIMUM AIS IN ACCIDENT

OTHER VEHICLE: MAXIMUM AIS

PRIME/DEPLOY IMPACT w AB VEH:  
EVENT NUMBER

CDC 12 - F D E W - 4

TOTAL DELTA-V

Model Year, Make, Model, Body Type:

1988 CHEV S-10 BLAZER 4x4

AIRBAG VEHICLE INSPECTION

DATE VEH. INSPECTED                      / 90

REASON VEHICLE NOT INSPECTED

- (0) Not Required
- (1) Inspection Completed
- (2) Cannot be Located\*\*
- (3) Repaired or Destroyed\*\*
- (5) Refusal or Impounded\*\*
- (7) Other\*

\*\*Specify:                     

IMPACT DATA OBTAINED

- (0) No Data Obtained
- (1) CDC Only
- (2) Crush Profile Only
- (3) Trajectory Data Only
- (4) CDC and Crush Profile
- (5) CDC and Trajectory
- (6) Crush and Trajectory
- (7) CDC, Crush & Trajectory

BASIS OF DELTA-V

- (0) Not Computed (Unknown Why)
- (1) CRASH - Damage Only
- (2) CRASH - Damage+Trajectory
- (3) Missing Vehicle Algorithm
- (4) Yielding Object Algorithm
- (5) Unknown Basis
- (6) One Vehicle Beyond Scope
- (7) Collision Beyond Scope
- (8) Insufficient Data

VEHICLE HISTORY

HAS AIRBAG VEHICLE BEEN IN  
ANY PRIOR IMPACTS (1,2,9)\*

HAS ANY PRIOR MAINTENANCE/SERVICE  
BEEN PERFORMED ON SYSTEM(1,2,9)\*

\*Describe:                     

AIRBAG VEHICLE: FLEET

1990 DODGE DYNASTY

VIN 1G3XG56R7LD

MILEAGE 5825

\* (1)=Yes, (2)=No, (9)=Unknown

DRAFT - 09/04/85

SYSTEM READINESS LAMP  
(in Instrument Cluster)

PRE-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

DRIVER'S REPORT OF  
PRE-IMPACT FLASHING

- (00) No Flashing Reported
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not App (system removed)
- (99) Unknown

PERIOD OF PRE-IMPACT FLASHING

- (0) No Flashing
- (1) Same Day as Impact
- (2) Prior Day
- (3) Prior Two Days
- (4) Prior Week
- (5) Prior Month
- (6) Over One Month
- (9) Unknown

POST-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

POST-IMPACT FLASHING

- (00) No Flashing
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light *no power*
- (19) Flashing, Unkn Number
- (88) Not Appl (removed)
- (99) Unknown

AIRBAG VEHICLE  
FIRST HARMFUL EVENT

13

- (01) Fire or explosion
- (02) Immersion
- (03) Gas Inhalation
- (04) Fell from vehicle
- (05) Injured in vehicle
- (06) Other noncollision (specify):
- (07) Overturn
- (08) Jackknife with intraunit damage  
Collision With:
- (09) Pedestrian
- (10) Pedalcyclist
- (11) Railway train
- (12) Animal
- (13) Motor vehicle in transport (same roadway)
- (14) Motor vehicle in transport (other roadway)
- (15) Parked motor vehicle
- (16) Other type nonmotorist (specify):
- (17) Thrown or falling object
- (18) Boulder  
Collision with Fixed Object:
- (20) Building
- (21) Impact attenuator/Crash Cushion
- (22) Bridge pier or abutment
- (23) Bridge parapet end
- (24) Bridge rail
- (25) Guardrail
- (26) Concrete traffic barrier
- (27) Median barrier
- (28) Other longitudinal barrier (specify):
- (29) Highway/Traffic sign post
- (30) Overhead sign support
- (31) Luminaire/Light support
- (32) Utility pole
- (33) Other post, pole, or support (specify):
- (34) Culvert
- (35) Curb
- (36) Ditch
- (37) Embankment-earth
- (38) Embankment-rock, stone or concrete
- (39) Fence (wooden, wire, chain link, etc.)
- (40) Wall (stone, rock, metal, etc.)
- (41) Fire hydrant
- (42) Shrubbery
- (43) Tree
- (44) Other fixed object (specify):
- (45) Pavement surface irregularity (pothole, grooved, grates)
- (99) Unknown

AIRBAG VEHICLE IMPACT SUMMARY

VEHICLE ROLE

- (0) Non-collision  
( ) Striking Unit  
(2) Struck Unit  
(3) Both Striking and Struck  
( ) Unknown

MANNER OF LEAVING SCENE

- ( ) Driven  
(2) Towed-due to damage  
(3) Towed - not for damage  
( ) Towed - details unknown  
( ) Abandoned  
(9) Unknown

NUMBER OF IMPACT EVENTS

- (8) 8 or more, (9) Unknown

ROLLOVER

- (0) No Rollover  
(1) First Event  
(2) Subsequent Event  
(3) Yes, Unknown Event  
(9) Unknown

OVERRIDE/UNDERRIDE

- (1) No over/underride  
( ) Override - 1st CDC  
( ) - Other CDC  
(4) Underride - 1st CDC  
(6) - Other CDC  
( ) Unknown

AIRBAG VEHICLE DAMAGE

- CODES: (1) Yes, DAMAGED  
(2) No Damage  
(9) Unknown

LEFT FRONT FENDER DAMAGE

RIGHT FRONT FENDER DAMAGE

CENTER TOP OF GRILLE DAMAGE

FRONT BUMPER E.A. STATUS: Left

- ( ) Normal Right  
(2) Extended  
(3) Partial Compression  
( ) Complete Compression  
(5) Not Applicable  
(9) Unknown

FIRST AIRBAG VEHICLE IMPACT:

CONFIGURATION

- (0) Struck Object or Pedestrian  
(1) Rear-End  
(2) Head-On  
(3) Rear-to-Rear  
(4) Angle  
(5) Sideswipe - Same Direction  
(6) Sideswipe-Opposite Direct.  
(7) NonCollision Fell from Veh  
(8) NonImpact Deployment  
(9) Unknown

CDC 12 - F D E W - 4

OBJECT CONTACTED: U-2, 88 CHEV  
S-10 BLAZER

PRIMARY/DEPLOYMENT IMPACT:

EVENT NUMBER

TOTAL DELTA-V

LONGITUDINAL DELTA-V

CONFIGURATION

- (0) Struck Object or Pedestrian  
(1) Rear-End  
(2) Head-On  
(3) Rear-to-Rear  
(4) Angle  
(5) Sideswipe - Same Direction  
(6) Sideswipe-Opposite Direct.  
(7) NonCollision Fell from Veh  
(8) NonImpact Deployment  
(9) Unknown

CDC 12 - F D E W - 4

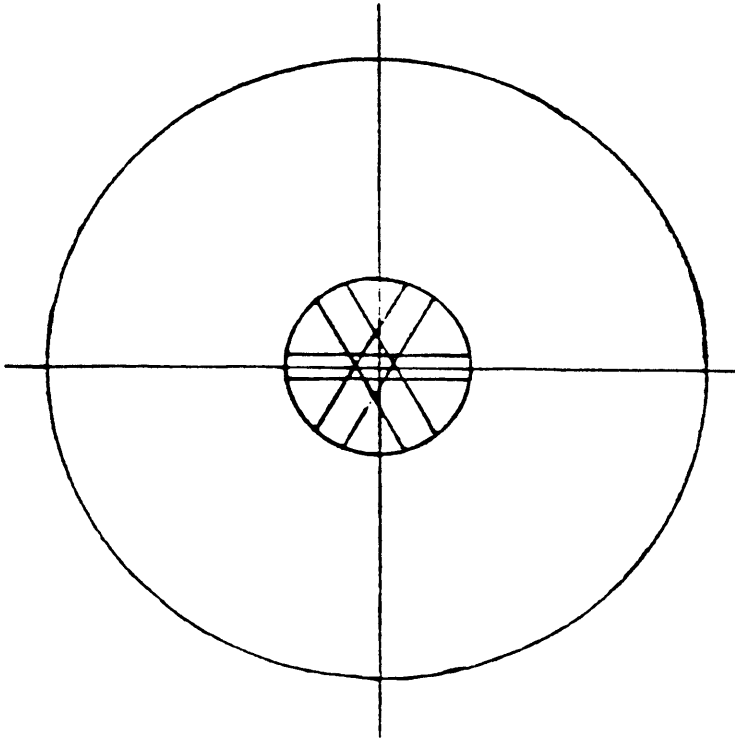
OBJECT CONTACTED: 88 CHEV. S-10 BLAZER

NOTES:

<b>AIRBAG SYSTEM DAMAGE</b>		<b>CONDITION OF DEPLOYED BAG</b>	<u>1</u>
CODES: (1) Yes, Damaged* (2) No, Intact (8) Not App.(Removed) (9) Unknown		(1) Bag Intact (2) Split or Torn* (3) Cut by Object in Impact* (4) Cut after Accident* (5) Other (e.g., burned)* (8) N/A (not deployed) (9) Unknown	
AIRBAG MODULE	<u>2</u>	<b>*DESCRIBE System and Bag Damage:</b>  _____ _____ _____ _____ _____ _____	
SENSORS: Left Front	<u>2</u>		
Center Front	<u>8</u>		
Right Front	<u>2</u>		
Rear, Cowl	<u>9</u>		
DIAGNOSTIC MODULE	<u>9</u>		
WIRING	<u>2</u>		
KNEE DIVERter	<u>1</u>		
INDICATION OF DISCONNECTED OR LOOSE ELECTRICAL CONNECTORS	<u>2</u>		

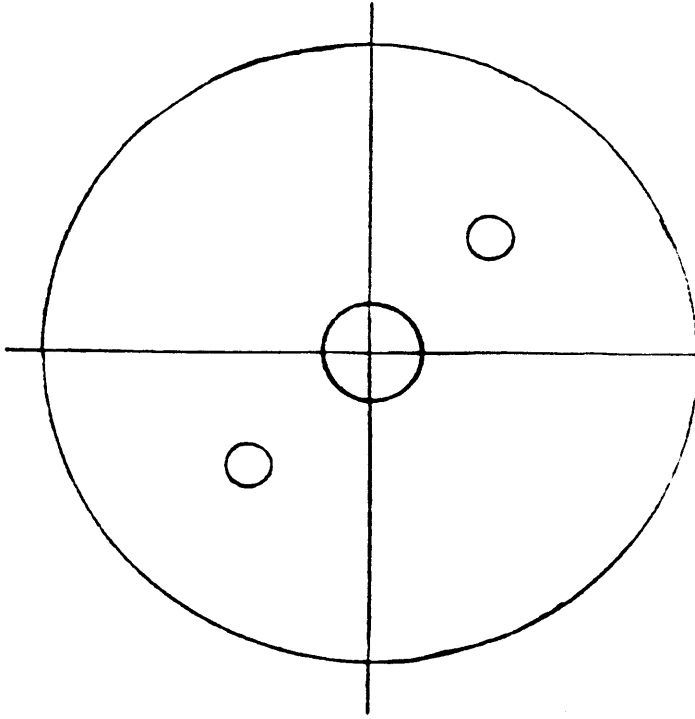
NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW:

NO CONTACT EVIDENCE



FRONT

TOP



BOTTOM



OCCUPANTS of AIRBAG CAR		NOTES:	
NUMBER OF OCCUPANTS IN VEHICLE (8) 8 or more	<u>2</u>		
NUMBER OF INJURED PERSONS	<u>2</u>		
MAXIMUM AIS IN AIRBAG VEHICLE (0) No Injury (1-6) AIS Severity (7) Injured, Unknown Severity (9) Unknown	<u>5</u>		
DRIVER AGE <u>43</u> SEX <u>MALE</u>			
NUMBER OF DRIVER INJURIES	<u>8</u>		
SOURCE OF BEST INJURY DATA	<u>2</u>		
(0) Not Injured (1) Autopsy w/wo med. records (2) Hospital Medical Records (3) Emergency Room only (4) Private physician, Clinic (5) Lay Coroner Report (6) EMS Personnel (7) Interviewee (8) Police (9) Unknown			
-----			
MAXIMUM AIS BY BODY REGION			
REGION	MAX AIS		CONTACT
Head/Neck/Face	---		---
Chest	---		---
Abdomen	---		---
Leg/Hips	<u>3</u>	<u>13</u>	
Other (Arms)	<u>3</u>	<u>10</u>	
DRIVER MAXIMUM	<u>3</u>	<u>13</u>	
-----			
EJECTION: Extent <u>None</u>			
Portal <u>N/A</u>			

**DRIVER BELT USAGE:** (1) Used (2) Not Used (9) Unknown 2

Evidence: NO BELT USAGE

**DRIVER POSTURE:** Any Comments Recorded (1) Yes, (2) No 1

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs and feet. Also note hand and arm position. Did driver brace before crash? Describe:

NORMAL POSTURE BEHIND WHEEL, BOTH HANDS ON STR. WHEEL

AT 10-2 O'CLOCK

**DRIVER FOREIGN OBJECTS:** Comments Recorded (1) Yes, (2) No 2

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

**DRIVER COMMENTS:** Comments Recorded (1) Yes, (2) No 1

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

NONE, FELT BAG SAVE HIM FROM SERIOUS/FATAL INJURIES

**PASSENGER-AIRBAG CONTACT** (1) Yes, (2) No, (9) Unknown 2

Describe: \_\_\_\_\_

APPENDIX D

NASS Vehicle Forms



## GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. ~~Primary Sampling Unit Number~~ \_\_\_\_\_

2. Case Number — ~~Stratum~~ 90-14

3. Vehicle Number 01

### VEHICLE IDENTIFICATION

4. Vehicle Model Year 90

Code the last two digits of the model year  
(99) Unknown

5. Vehicle Make (specify): 07

DODGE

Applicable codes are found in your  
NASS CDS Data Collection, Coding, and  
Editing Manual.  
(99) Unknown

6. Vehicle Model (specify): 018

DYNASTY LE 4DR.

Applicable codes are found in your  
NASS CDS Data Collection, Coding, and  
Editing Manual.  
(999) Unknown

7. Body Type 04

Note: Applicable codes are found on  
the back of this page.

8. Vehicle Identification Number

LB3XC56R7 [REDACTED]

Left justify; Slash zeros and letter Z (0 and Z)  
No VIN — Code all zeros  
Unknown — Code all nine's

### OFFICIAL RECORDS

9. Police Reported Vehicle Disposition 1

(0) Not towed due to vehicle damage  
(1) Towed due to vehicle damage  
(9) Unknown

10. Police Reported Travel Speed 99

Code to the nearest mph (NOTE: 00 means  
less than 0.5 mph)  
(97) 96.5 mph and above  
(99) Unknown

11. Police Reported Alcohol or Drug Presence 0

(0) Neither alcohol nor drugs present  
(1) Yes (alcohol present)  
(2) Yes (drugs present)  
(3) Yes (alcohol and drugs present)  
(4) Yes (alcohol or drugs present — specifics  
unknown)  
(7) Not reported  
(8) No driver present  
(9) Unknown

12. Alcohol Test Result for Driver 96

Code actual value (decimal implied before  
first digit — 0.xx)  
(95) Test refused  
(96) None given  
(97) AC test performed, results unknown  
(98) No driver present  
(99) Unknown

Source \_\_\_\_\_

### ACCIDENT RELATED

13. Speed Limit 35

(00) No statutory limit  
Code posted or statutory speed limit  
(99) Unknown

14. Attempted Avoidance Maneuver 08

(00) No impact  
(01) No avoidance actions  
(02) Braking (no lockup)  
(03) Braking (lockup)  
(04) Braking (lockup unknown)  
(05) Releasing brakes  
(06) Steering left  
(07) Steering right  
(08) Braking and steering left  
(09) Braking and steering right  
(10) Accelerating  
(11) Accelerating and steering left  
(12) Accelerating and steering right  
(97) No driver present  
(98) Other action (specify):  
\_\_\_\_\_

(99) Unknown

15. Accident Type 51

Applicable codes may be found on the back  
of page two of this field form  
(00) No impact  
Code the number of the diagram that  
best describes the accident circumstance  
(98) Other accident type (specify):  
\_\_\_\_\_

(99) Unknown

\*\*\*\* STOP HERE IF GV07 DOES NOT EQUAL 01-49 \*\*\*\*

## CODES FOR BODY TYPE

### CDS APPLICABLE VEHICLES

#### Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (08) Other automobile type (specify): \_\_\_\_\_

(09) Unknown automobile type

#### Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, and Brat)
- (11) Auto based panel (cargo station wagon, includes auto based ambulance/hearse)
- (12) Large limousine—more than four side doors or stretched chassis

#### Utility Vehicles

- (13) Short utility—not truck based (includes Jeep CJ-5, Jeep CJ-7, Renegade, Landrover, Pre-78 Bronco, Landcruiser, Thing)
- (14) Truck based utility (2-door; includes Blazer, Bronco—78 on, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

#### Van Based Light Trucks (< 10,000 lbs GVWR)

- (20) Minivan (Lumina APV, Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager [84 and after], Dodge Vista, Mini Ram Van, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
- (21) Standard van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally, Voyager [83 and before], Beauville, Sportsman)
- (28) Other van type (specify): \_\_\_\_\_
- (29) Unknown van type

#### Light Conventional Trucks (Pickup Style Cab, < 10,000 lbs GVWR)

- (30) Compact pickup (< 4,500 lbs. GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-15 Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
- (31) Standard pickup (4,500 to 10,000 lbs. GVWR, C10 - C30, K10 - K30, T10, D100 - D350, W150 - W350, F100 - F350, Comanche, J10 - J30, Dakota)
- (32) Pickup with slide-in camper
- (33) Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)
- (34) Light truck based suburban limousine
- (35) Convertible pickup
- (39) Unknown (pickup style) light conventional truck type

#### Other Light Trucks (< 10,000 lbs GVWR)

- (40) Cab chassis based (includes rescue vehicle, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (47) Other light conventional truck type (not a pickup) (specify): \_\_\_\_\_
- (48) Unknown other light truck type (not a pickup)
- (49) Unknown light vehicle type (automobile, van, or light truck)

### OTHER VEHICLES

#### Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): \_\_\_\_\_
- (59) Unknown bus type

#### Medium/Heavy Trucks (> 10,000 lbs GVWR)

- (60) Step van
- (61) Single unit straight truck (10,000 lbs < GVWR < 26,000 lbs)
- (62) Single unit straight truck (> 26,000 lbs GVWR)
- (63) Medium/heavy truck based motorhome
- (64) Truck-tractor with no cargo trailer
- (65) Truck-tractor pulling one trailer
- (66) Truck-tractor pulling two or more trailers
- (67) Truck-tractor (unknown if pulling trailer)
- (68) Unknown medium/heavy truck type
- (69) Unknown truck type (light/medium/heavy)

#### Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (70) Motorcycle
- (71) Moped (motorized bicycle)
- (78) Other motored cycle type (minibike, motorscooter) (specify): \_\_\_\_\_

(79) Unknown motored cycle type

#### Other Vehicles

- (80) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (88) Other vehicle type (specify): \_\_\_\_\_

(99) Unknown body type

**OCCUPANT RELATED**

16. Driver Presence in Vehicle 1  
 (0) Driver not present  
 (1) Driver present  
 (9) Unknown
17. Number of Occupants This Vehicle 02  
 (00-96) Code actual number of occupants for this vehicle  
 (97) 97 or more  
 (99) Unknown
18. Number of Occupant Forms Submitted 02

**VEHICLE WEIGHT ITEMS**

19. Vehicle Curb Weight 0 3, 0 0 0  
~~2992~~ Code weight to nearest 100 pounds.  
 (010) Less than 1050 pounds  
 (135) 13,500 lbs or more  
 (999) Unknown  
 Source: \_\_\_\_\_
20. Vehicle Cargo Weight 0 0 0 0  
 \_\_\_\_\_ Code weight to nearest 100 pounds.  
 (00) Less than 50 pounds  
 (97) 9,650 lbs or more  
 (99) Unknown

**RECONSTRUCTION DATA**

21. Towed Trailing Unit 0  
 (0) No towed unit  
 (1) Yes – towed trailing unit  
 (9) Unknown
22. Documentation of Trajectory Data for This Vehicle 0  
 (0) No  
 (1) Yes
23. Post Collision Condition of Tree or Pole (for Highest Delta V) 0  
 (0) Not collision (for highest delta V) with tree or pole  
 (1) Not damaged  
 (2) Cracked/sheared  
 (3) Tilted < 45 degrees  
 (4) Tilted ≥ 45 degrees  
 (5) Uprooted tree  
 (6) Separated pole from base  
 (7) Pole replaced  
 (8) Other (specify): \_\_\_\_\_  
 (9) Unknown

24. Rollover 0  
 (0) No rollover (no overturning)  
 Rollover (primarily about the longitudinal axis)  
 (1) Rollover, 1 quarter turn only  
 (2) Rollover, 2 quarter turns  
 (3) Rollover, 3 quarter turns  
 (4) Rollover, 4 or more quarter turns (specify): \_\_\_\_\_  
 (5) Rollover – end-over-end (i.e., primarily about the lateral axis)  
 (9) Rollover (overturn), details unknown

**OVERRIDE/UNDERRIDE (THIS VEHICLE)**

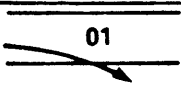
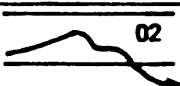
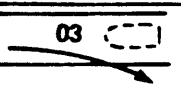
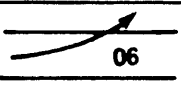
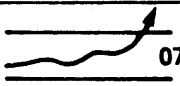
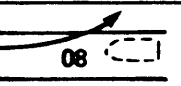
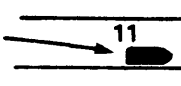
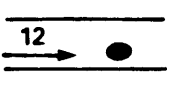
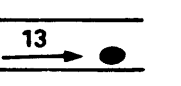
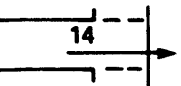
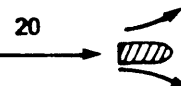
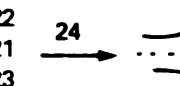
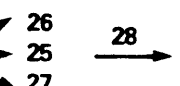
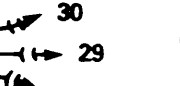
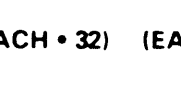
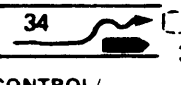
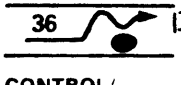
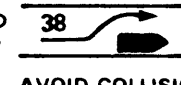
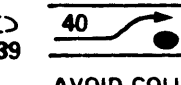
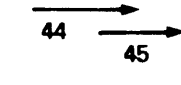
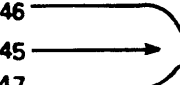






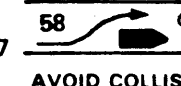
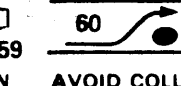
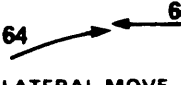


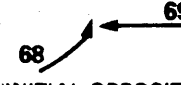
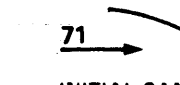
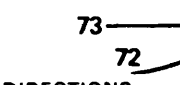

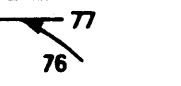
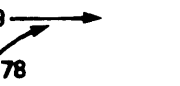
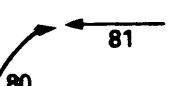
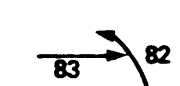
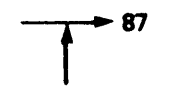

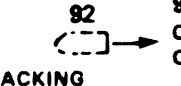

25. Front Override/Underride (this vehicle) 0
26. Rear Override/Underride (this vehicle) 0  
 (0) No override/underride, or not an end-to-end impact  
 Override (see specific CDC)  
 (1) 1st CDC  
 (2) 2nd CDC  
 (3) Other not automated CDC (specify): \_\_\_\_\_  
 Underride (see specific CDC)  
 (4) 1st CDC  
 (5) 2nd CDC  
 (6) Other not automated CDC (specify): \_\_\_\_\_  
 (7) Medium/heavy truck override  
 (9) Unknown

**HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V**

Values: (000)-(359) Code actual value  
 (997) Noncollision  
 (998) Impact with object  
 (999) Unknown

27. Heading Angle for This Vehicle 000
28. Heading Angle for Other Vehicle 185



Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I. Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C. Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER 16 SPECIFICS UNKNOWN
II. Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 22 SLOWER 25, 26, 27	 24 DECEL. 29, 30, 31	 26 AVOID COLLISION WITH VEH.	 28 AVOID COLLISION WITH OBJECT (EACH • 32) SPECIFICS OTHER (EACH • 33) SPECIFICS UNKNOWN
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	 40 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER (EACH • 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle	 44 45 47	 46 45 47	 48 45 47	(EACH • 48) SPECIFICS OTHER	(EACH • 49) SPECIFICS UNKNOWN
III. Same Trafficway Opposite Direction	G. Head-On	 50 LATERAL MOVE	 51 (EACH • 52) SPECIFICS OTHER	 53 (EACH • 53) SPECIFICS UNKNOWN		
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	 60 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER (EACH • 63) SPECIFICS UNKNOWN
	I. Sideswipe Angle	 64 LATERAL MOVE	 65 (EACH • 66) SPECIFICS OTHER	 67 (EACH • 67) SPECIFICS UNKNOWN		
IV. Change Trafficway Vehicle Turning	J. Turn Across Path	 68 INITIAL OPPOSITE DIRECTIONS	 69 INITIAL SAME DIRECTIONS	 70 71 72	 73 72	(EACH • 74) SPECIFICS OTHER (EACH • 75) SPECIFICS UNKNOWN
	K. Turn Into Path	 76 TURN INTO SAME DIRECTION	 77 78	 79 80	 81 82	(EACH • 84) SPECIFICS OTHER (EACH • 85) SPECIFICS UNKNOWN
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths	 86 87	 88 89	(EACH • 90) SPECIFICS OTHER	(EACH • 91) SPECIFICS UNKNOWN	
VI. Miscellaneous	M. Backing Etc.	 92 BACKING VEH.	 93 OTHER VEH. OR OBJECT	98 Other Accident Type 99 Unknown Accident Type 00 No Impact		

## 29. Basis for Total Delta V (Highest)

2

## Delta V Calculated

- (1) CRASH program – damage only routine
- (2) CRASH program – damage and trajectory routine
- (3) Missing vehicle algorithm

## Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction techniques, regardless of adequacy of damage data.
- (6) All vehicles and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

**COMPUTER GENERATED DELTA V**

Secondary Highest

## 30. Total Delta V

4241.7 Nearest mph

(NOTE: 00 means less than  
0.5 mph)  
(97) 96.5 mph and above  
(99) Unknown

## 31. Longitudinal Component of Delta V

+ 41-41.3 Nearest mph

(NOTE: —00 means greater than  
–0.5 and less than +0.5 mph)  
(± 97) ± 96.5 mph and above  
(— 99) Unknown

Secondary Highest

## 32. Lateral Component of Delta V

+ 06-5.5 Nearest mph

(NOTE: —00 means greater than  
–0.5 and less than +0.5 mph)  
(± 97) ± 96.5 mph and above  
(— 99) Unknown

## 33. Energy Absorption

145,100145104.6 Nearest 100 foot-lbs

(NOTE: 0000 means less than 50 Foot-Lbs)  
(9997) 999,650 foot-lbs or more  
(9999) Unknown

## 34. Confidence in Reconstruction Program Results (for Highest Delta V)

1

- (0) No reconstruction
- (1) Collision fits model – results appear reasonable
- (2) Collision fits model – results appear high
- (3) Collision fits model – results appear low
- (4) Borderline reconstruction – results appear reasonable

## 35. Type of Vehicle Inspection

1

- (0) No inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

## 36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), \*\*\*  
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

## EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number <u>      </u>	3. Vehicle Number <u>01</u>
2. Case Number — <del>Stratum</del> <u>90-14</u>	

## VEHICLE IDENTIFICATION

VIN 1B3XC56R7 [REDACTED] Model Year 1990  
Vehicle Make (specify): DODGE Vehicle Model (specify): DYNASTY

## LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L	Location of Maximum Crush
1	FRONT BUMPER 53.5"	FRONT BUMPER 53.5"	ON BUMPER, 13.5" RIGHT OF CENTER

## CRUSH PROFILE

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

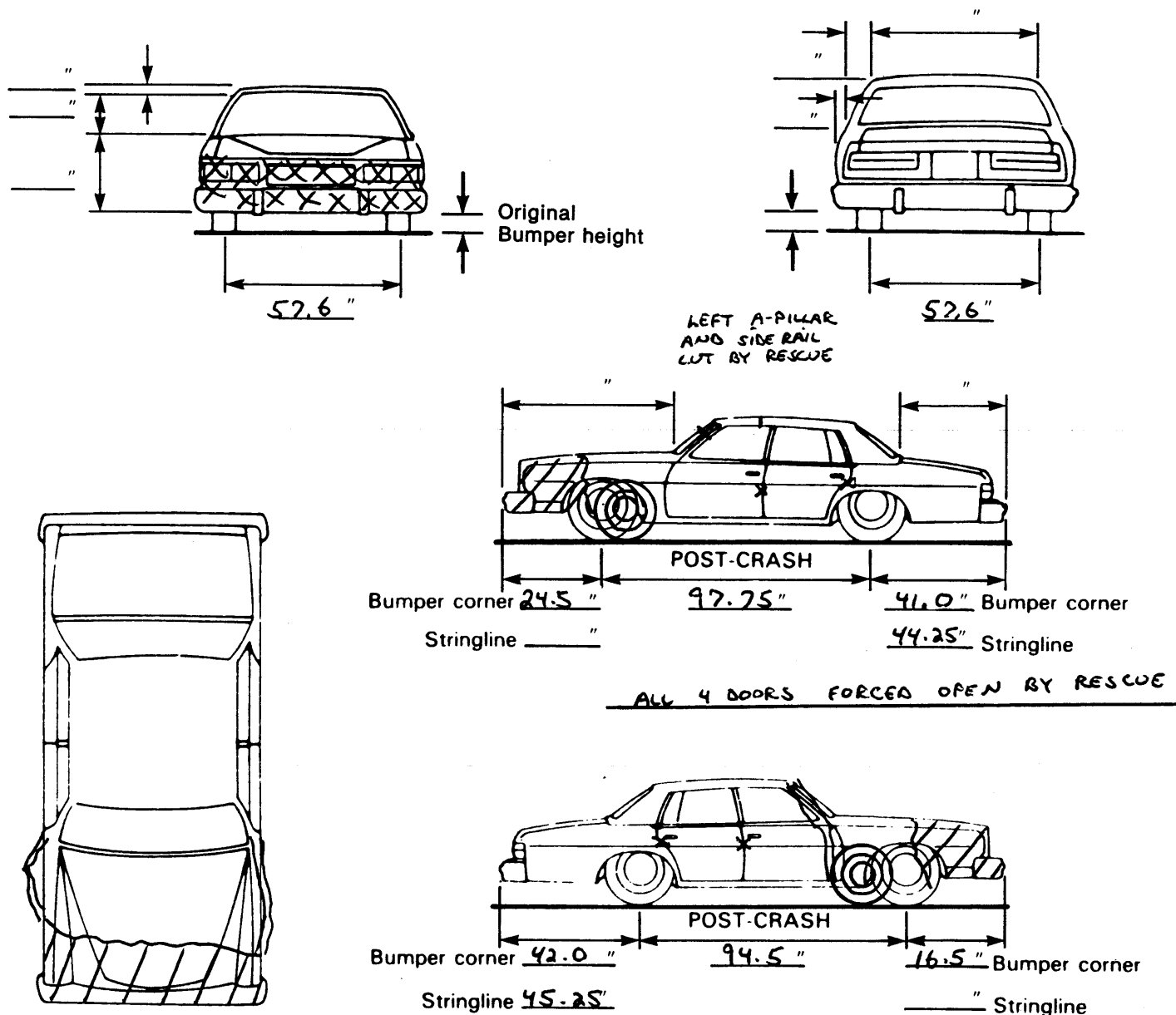
Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]

## VEHICLE DAMAGE SKETCH

<b>TIRE – WHEEL DAMAGE</b> a. Rotation physically restricted RF <u>1</u> LF <u>1</u> RR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		<b>ORIGINAL SPECIFICATIONS</b> Wheelbase <u>104.3"</u> Overall Length <u>192.0"</u> Maximum Width <u>68.9"</u> Curb Weight <u>2992</u> Average Track <u>52.6"</u> Front Overhang <u>42.8"</u> Rear Overhang <u>44.9"</u> Engine Size: cyl./ displ. <u>V-6, 3.3 liter</u> Undeformed End Width _____		<b>WHEEL STEER ANGLES</b> (For locked front wheels or displaced rear axles only) RF ± _____° LF ± _____° RR ± _____° LR ± _____° Within ± 5 degrees
<b>TYPE OF TRANSMISSION</b> <input type="checkbox"/> Manual <input checked="" type="checkbox"/> Automatic		<b>DRIVE WHEELS</b> <input checked="" type="checkbox"/> FWD <input type="checkbox"/> RWD <input type="checkbox"/> 4WD		
		Approximate Cargo Weight <u>N/A</u>		



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CODES FOR OBJECT CONTACTED

(99) Unknown event or object

## 48

## COLLISION DEFORMATION CLASSIFICATION

## HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>01</u>	5. <u>02</u>	6. <u>12</u>	7. <u>F</u>	8. <u>D</u>	9. <u>E</u>	10. <u>W</u>	11. <u>04</u>

## Second Highest Delta "V"

12. <u>   </u>	13. <u>   </u>	14. <u>   </u>	15. <u>   </u>	16. <u>   </u>	17. <u>   </u>	18. <u>   </u>	19. <u>   </u>
----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------

## CRUSH PROFILE

(The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. ALL MEASUREMENTS ARE IN INCHES.)

## HIGHEST DELTA "V"

20. <u>L</u>	21. <u>C1</u>	<u>C2</u>	<u>C3</u>	<u>C4</u>	<u>C5</u>	<u>C6</u>	22. + - D
<u>054</u>	<u>23</u>	<u>26</u>	<u>28</u>	<u>30</u>	<u>34</u>	<u>32</u>	<u>000</u>

## Second Highest Delta "V"

23. <u>L</u>	24. <u>C1</u>	<u>C2</u>	<u>C3</u>	<u>C4</u>	<u>C5</u>	<u>C6</u>	25. + - D
<u>   </u>	<u>   </u>	<u>   </u>	<u>   </u>	<u>   </u>	<u>   </u>	<u>   </u>	<u>   </u>

26. Are CDCs Documented  
but Not Coded on The  
Automated File

(0) No  
(1) Yes

0

27. Researcher's Assessment  
of Vehicle Disposition

(0) Not towed due to  
vehicle damage  
(1) Towed due to  
vehicle damage  
(9) Unknown

1

28. Original Wheelbase

104.3 Code to the  
nearest  
tenth of an inch  
(9999) Unknown

104.3

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED \*\*\*  
(I.E., GV09 = 0 OR 9), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



# INTERIOR VEHICLE FORM

BEST AVAILABLE COPY

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - Stratum

3. Vehicle Number

## INTEGRITY

4. Passenger Compartment Integrity

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (rear)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate Or Hatch Opening

5. LF 3 6. RF 3 7. LR 3 8. RR 3 9. TG/H 0

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV08, Use Then Code 8.

10. LF 2 11. RF 2 12. LR 2 13. RR 2 14. TG/H 2

(0) No door/gate/hatch or door not opened

Door, Tailgate, or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

## GLAZING

Glazing Damage from Impact Forces

15. WS 2 16. LF 0 17. RF 0 18. LR 0 19. RR 0

20. BL 0 21. Roof 8 22. Other 8

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 2 24. LF 0 25. RF 0 26. LR 0 27. RR 0

28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact

(5) Glazing out-of-place by occupant contact and holed by occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage **And** No Occupant Contact or No Glazing, Then Code IV 31 Through IV 46 As 0

Type of Window/Windshield Glazing

31. WS 1 32. LF 2 33. RF 2 34. LR 2 35. RR 2

36. BL 2 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 - Laminated

(2) AS-2 - Tempered

(3) AS-3 - Tempered-tinted

(4) AS-14 - Glass/Plastic

(8) Other (specify):

(9) Unknown

Window Pre-crash Glazing Status

39. WS 1 40. LF 3 41. RF 2 42. LR 2 43. RR 2

44. BL 1 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

(2) Closed

(3) Partially opened

(4) Fully opened

(9) Unknown



[illegible]

51

## OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV 47-IV 86 blank.

Location	Intruding Component	Magnitude	Crush Intrusion	Dominant Direction
----------	---------------------	-----------	-----------------	--------------------

1st 47. 1 1 48. 0 6 49. 2 50. 22nd 51. 1 1 52. 0 2 53. 2 54. 23rd 55. 1 1 56. 0 5 57. 2 58. 24th 59. 1 1 60. 1 7 61. 3 62. 15th 63. 1 3 64. 0 5 65. 3 66. 26th 67. 1 3 68. 0 4 69. 3 70. 27th 71. 1 3 72. 0 6 73. 3 74. 28th 75. 1 3 76. 1 4 77. 3 78. 29th 79.      80.      81.      82.     10th 83.      84.      85.      86.     

## LOCATION OF INTRUSION

## Front Seat

- (11) Left
- (12) Middle
- (13) Right

## Fourth Seat

- (41) Left
- (42) Middle
- (43) Right

## Second Seat

- (21) Left
- (22) Middle
- (23) Right

## (97) Catastrophic

(98) Other enclosed area (specify):

(99) Unknown

## Third Seat

- (31) Left
- (32) Middle
- (33) Right

## INTRUDING COMPONENT

## Interior Components

- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Door panel
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back panel or door surface
- (26) Other interior component (specify):

- (27) Side panel - forward of the A-pillar
- (28) Side panel - rear of the A-pillar

## Exterior Components

- (30) Hood
- (31) Outside surface of vehicle (specify):
- (32) Other exterior object in the environment (specify):
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify):
- (99) Unknown

## MAGNITUDE OF INTRUSION

- (1)  $\geq 1$  inch but  $< 3$  inches
- (2)  $\geq 3$  inches but  $< 6$  inches
- (3)  $\geq 6$  inches but  $< 12$  inches
- (4)  $\geq 12$  inches but  $< 18$  inches
- (5)  $\geq 18$  inches but  $< 24$  inches
- (6)  $\geq 24$  inches
- (7) Catastrophic
- (9) Unknown

## DOMINANT CRUSH DIRECTION

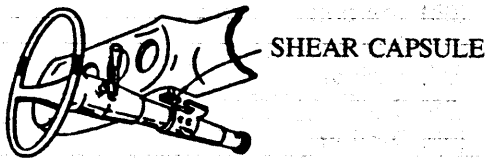
- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

# STEERING COLUMN WORKING DIAGRAMS

BEST AVAILABLE COPY

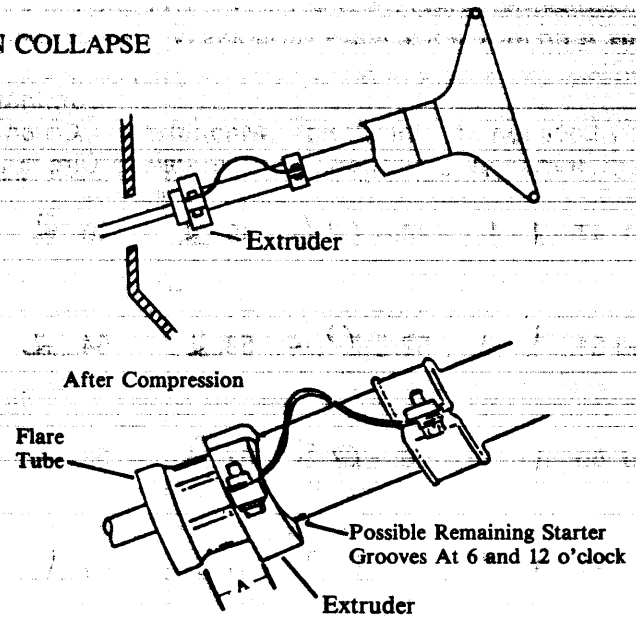
## STEERING COLUMN COLLAPSE

### Steering Column Shear Module Movement



Right — V = " "

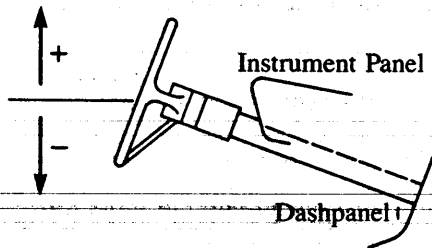
Direction and Magnitude of Steering Column Movement



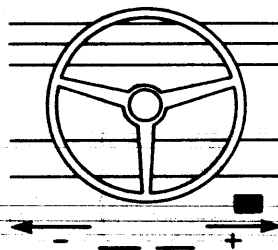
Compression = Measurement A A =

## STEERING COLUMN MOVEMENT

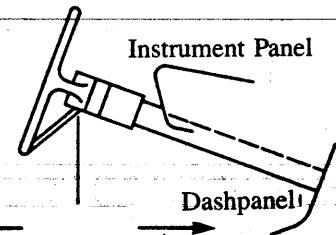
### Vertical Movement



### Lateral Movement



### Longitudinal Movement



	COMPARISON VALUE	-	DAMAGED VALUE	=	MOVEMENT
VERTICAL		-		=	
LATERAL		-		=	
LONGITUDINAL		-		=	

## STEERING RIM/SPOKE DEFORMATION

COMPARISON VALUE	-	DAMAGED VALUE	=	DEFORMATION
	-		=	
	-		=	

**STEERING COLUMN****87. Steering Column Type** 2

- (1) Fixed column  
 (2) Tilt column  
 (3) Telescoping column  
 (4) Tilt and telescoping column  
 (8) Other column type (specify): \_\_\_\_\_

(9) Unknown

If PDOF  $\neq$  11, 12 or 1, Then Code IV88-IV91 As 96

**88. Steering Column Collapse Due to Occupant Loading** 02

2.25 Code actual measured movement to the nearest inch. See coding manual for measurement technique(s).

- (00) No movement, compression, or collapse  
 (01-19) Actual measured value  
 (20) 20 inches or greater

Estimated movement from observation

- (81) Less than 1 inch  
 (82)  $\geq 1$  inch but  $< 2$  inches  
 (83)  $\geq 2$  inches but  $< 4$  inches  
 (84)  $\geq 4$  inches but  $< 6$  inches  
 (85)  $\geq 6$  inches but  $< 8$  inches  
 (86) Greater than or equal to 8 inches  
 (96) Not assessed (PDOF  $\neq$  11, 12, 1)  
 (97) Apparent movement, value undetermined or cannot be measured or estimated  
 (98) Nonspecified type column  
 (99) Unknown

**Direction And Magnitude of Steering Column Movement****89. Vertical Movement** 081**90. Lateral Movement** 000**91. Longitudinal Movement** 081

Code the actual measured movement to the nearest inch. See Coding Manual for measurement technique(s)

- (00) No steering column movement  
 ( $\pm 01 - \pm 49$ ) Actual measured value  
 ( $\pm 50$ ) 50 inches or greater

Estimated movement from observation

- ( $\pm 81$ )  $\geq 1$  inch but  $< 3$  inches  
 ( $\pm 82$ )  $\geq 3$  inches but  $< 6$  inches  
 ( $\pm 83$ )  $\geq 6$  inches but  $< 12$  inches  
 ( $\pm 84$ )  $\geq 12$  inches  
 (—96) Not assessed (PDOF  $\neq$  11, 12, 1)  
 (—97) Apparent movement  $> 1$  inch but cannot be measured or estimated  
 (—99) Unknown

**92. Steering Rim/Spoke Deformation** 0

Code actual measured

deformation to the nearest inch.

- (0) No steering rim deformation  
 (1-5) Actual measured value  
 (6) 6 inches or more  
 (8) Observed deformation cannot be measured  
 (9) Unknown

**93. Location of Steering Rim/Spoke Deformation** 00

- (00) No steering rim deformation

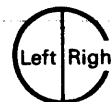
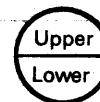
Quarter Sections

- (01) Section A  
 (02) Section B  
 (03) Section C  
 (04) Section D



Half Sections

- (05) Upper half of rim/spoke  
 (06) Lower half of rim/spoke  
 (07) Left half of rim/spoke  
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse  
 (10) Undetermined location  
 (99) Unknown

**INSTRUMENT PANEL****94. Odometer Reading** 006,000

5,875 miles—Code mileage to the nearest 1,000 miles

- (000) No odometer  
 (001) Less than 1,500 miles  
 (300) 299,500 miles or more  
 (999) Unknown

Source: \_\_\_\_\_

**95. Instrument Panel Damage from Occupant Contact?** 1

- (0) No  
 (1) Yes  
 (9) Unknown

**96. Knee Bolsters Deformed from Occupant Contact?** 1

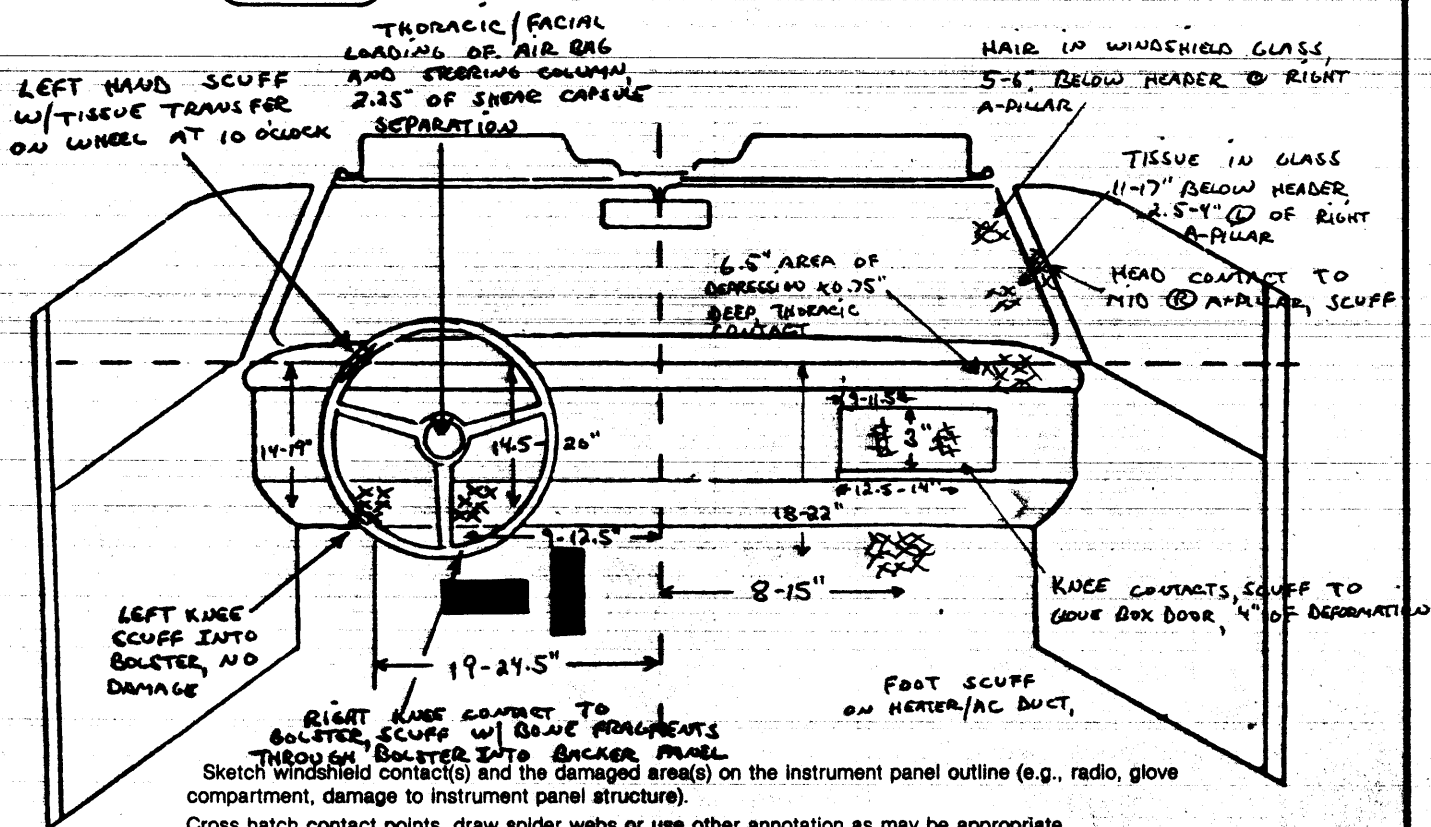
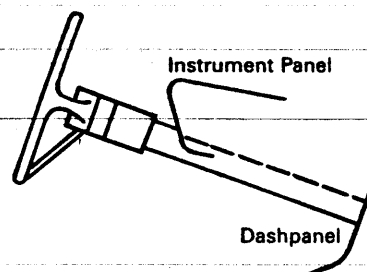
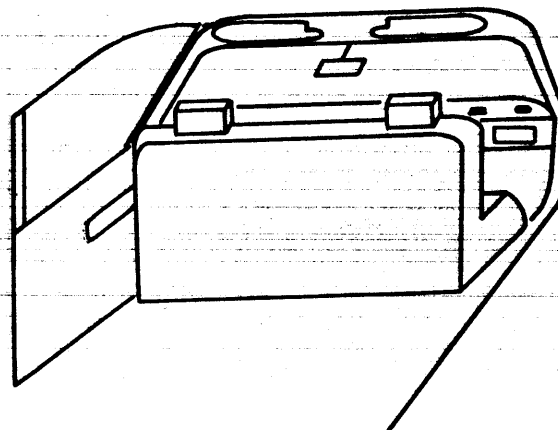
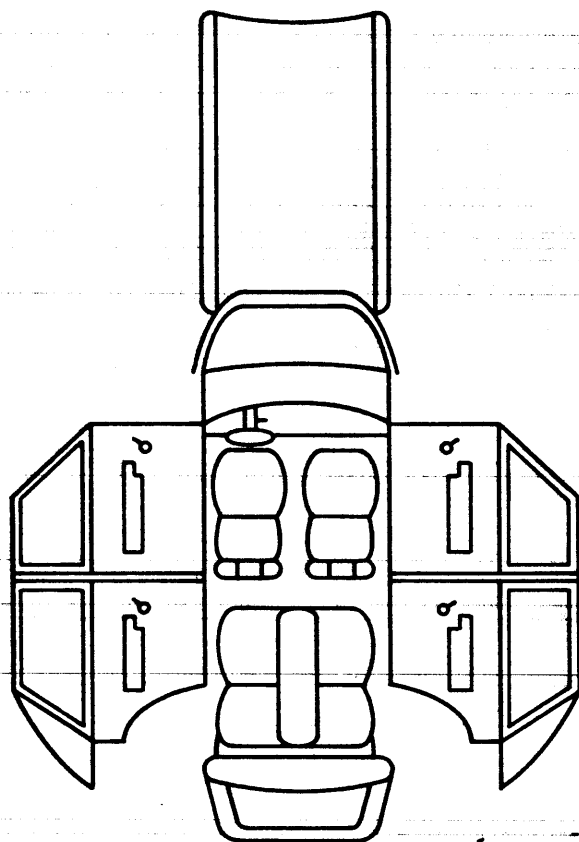
- (0) No  
 (1) Yes  
 (8) Not present  
 (9) Unknown

**97. Did Glove Compartment Door Open During Collision(s)?** 1

- (0) No  
 (1) Yes  
 (8) Not present  
 (9) Unknown

## VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



## POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	45	1	FACE/TORSO	TRAJECTORY	1
B	13	1	① KNEE	SCUFF	1
C	13	1	① KNEE	BONE FRAGMENTS	1
D	04	1	TORSO	2.5" SHEAR COMPRESSION	1
E	04	1	① HAND	SCUFF/TISSUE TRANSFER	1
F	12	2	KNEES	SCUFFED, DEFORMED	1
G	11	2	TORSO	1.75" x 6.5" DEPRESSION	1
H	32	2	HEAD	SCUFF	1
I	01	2	FACE	HAIR/TISSUE	1
J					
K					
L					
M					
N					

## CODES FOR INTERIOR COMPONENTS

## FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

- (48) Child safety seat (specify): \_\_\_\_\_

- (49) Other interior object (specify): \_\_\_\_\_

## RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

## ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

## FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

## REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

## INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): \_\_\_\_\_

- (47) Interior loose objects

## LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

## CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (4) Unknown

**AUTOMATIC RESTRAINTS**

**NOTES:** Encode the data for each applicable front seat position. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
<b>F I R S T</b>	Availability	1	-	-
	Function	4	-	-
	Failure	1	-	-

**Automatic (Passive) Restraint System Availability**

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): \_\_\_\_\_
- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

**Automatic (Passive) Restraint Function**

- (0) Not equipped/not available

**Automatic Belt**

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

**Air Bag**

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

**Did Automatic (Passive) Restraint Fail**

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): \_\_\_\_\_
- (9) Unknown



## MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	3	4
	Use	00	00	00
	Failure Modes	0	0	0
SECOND	Availability	4	3	4
	Use	00	00	00
	Failure Modes	0	0	0
THIRD	Availability			
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

## Manual (Active) Belt System Availability

(08) Other belt used (specify):

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available — type unknown
- (8) Other belt (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat — type unknown
- (18) Other belt used with child safety seat (specify):

(9) Unknown

(99) Unknown if belt used

## Manual (Active) Belt System Use

## Manual (Active) Belt Failure Modes During Accident

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify):
- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used — type unknown

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):
- (6) Broken retractor
- (7) Combination of above (specify):
- (8) Other manual belt failure (specify):
- (9) Unknown

# CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

## 1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):  
\_\_\_\_\_

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

## 2. Child Safety Seat Orientation

- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight
- (01) Rear facing
- (02) Forward facing
- (03) Other orientation (specify):  
\_\_\_\_\_
- (04) Unknown orientation
- Designed for Forward Facing for This Age/Weight
- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):  
\_\_\_\_\_
- (19) Unknown orientation
- Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight
- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):  
\_\_\_\_\_
- (29) Unknown orientation
- (99) Unknown if child safety seat used

## 3. Child Safety Seat Harness Usage

## 4. Child Safety Seat Shield Usage

## 5. Child Safety Seat Tether Usage

Note: Options Below Are Used for Variables 3-5.

(00) No child safety seat

Not Designed with Harness/Shield/Tether

(01) After market harness/shield/tether added, not used

(02) After market harness/shield/tether used

(03) Child safety seat used, but no after market harness/shield/tether added

(09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

(11) Harness/shield/tether not used

(12) Harness/shield/tether used

(19) Unknown if harness/shield/tether used

Unknown if Designed with Harness/Shield/Tether

(21) Harness/shield/tether not used

(22) Harness/shield/tether used

(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

## 6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

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## HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	-	3
	Seat Type	06	06	06
	Seat Performance	1	1	1
SECOND	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			

## Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral – no damage
- (2) Integral – damaged during accident
- (3) Adjustable – no damage
- (4) Adjustable – damaged during accident
- (5) Add-on – no damage
- (6) Add-on – damaged during accident
- (8) Other (specify): \_\_\_\_\_
- (9) Unknown

## Seat Performance (This Occupant Position)

- (0) No seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): \_\_\_\_\_

## Seat Type (This Occupant Position)

- (00) No seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify): \_\_\_\_\_
- (99) Unknown

- (7) Combination of above (specify): \_\_\_\_\_
- (8) Other (specify): \_\_\_\_\_
- (9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E. UNUSUAL OCCUPANT CONTACT PATTERN)

**EJECTION/ENTRAPMENT DATA**

Complete the following if the researcher has any indications that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

**EJECTION** No ☒ Yes ☐

Describe indications of ejection and body parts involved in partial ejection(s):

---



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Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

**Ejection**

- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

**(7) Roof**

(8) Other area (e.g., back of pickup, etc.) (specify):

(9) Unknown

**(5) Integral structure**

(8) Other medium (specify):

(9) Unknown

**Ejection Area**

- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear

**Ejection Medium**

- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify):

**Medium Status (Immediately Prior to Impact)**

- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

**ENTRAPMENT** No ☒ Yes ☐

Describe entrapment mechanism:

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Component(s):

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(Note in vehicle interior diagram)

## APPENDIX E

### NASS Occupant Forms



## OCCUPANT ASSESSMENT FORM

1. ~~Primary Sampling Unit Number~~ \_\_\_\_\_

2. Case Number - ~~Stratum~~ 90-14

3. Vehicle Number 01

4. Occupant Number 01

### OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 43

Code actual age at time of accident.

(00) Less than one year old (specify by month): \_\_\_\_\_

(97) 97 years and older

(99) Unknown

6. Occupant's Sex 1

(1) Male

(2) Female

(9) Unknown

7. Occupant's Height 68

Code actual height to the nearest inch.

(99) Unknown

8. Occupant's Weight 125

Code actual weight to the nearest pound.

(999) Unknown

9. Occupant's Role 1

(1) Driver

(2) Passenger

(9) Unknown

10. Occupant's Seat Position 11

Front Seat

(11) Left side

(12) Middle

(13) Right side

(14) Other (specify): \_\_\_\_\_

Second Seat

(21) Left side

(22) Middle

(23) Right side

(24) Other (specify): \_\_\_\_\_

Third Seat

(31) Left side

(32) Middle

(33) Right side

(34) Other (specify): \_\_\_\_\_

Fourth Seat

(41) Left side

(42) Middle

(43) Right side

(44) Other (specify): \_\_\_\_\_

(97) In or on unenclosed area

(98) Other seat (specify): \_\_\_\_\_

(99) Unknown

11. Occupant's Posture 0

(0) Normal posture

(1) Abnormal posture (specify): \_\_\_\_\_

(9) Unknown

### EJECTION/ENTRAPMENT

12. Ejection 0

(0) No ejection

(1) Complete ejection

(2) Partial ejection

(3) Ejection, unknown degree

(9) Unknown

13. Ejection Area 0

(0) No ejection

(1) Windshield

(2) Left front

(3) Right front

(4) Left rear

(5) Right rear

(6) Rear

(7) Roof

(8) Other area (e.g., back of pickup, etc.)

(specify): \_\_\_\_\_

(9) Unknown

14. Ejection Medium 0

(0) No ejection

(1) Door/hatch/tailgate

(2) Nonfixed roof structure

(3) Fixed glazing

(4) Nonfixed glazing (specify): \_\_\_\_\_

(5) Integral structure

(8) Other medium (specify): \_\_\_\_\_

(9) Unknown

15. Medium Status (Immediately Prior to Impact) 0

(0) No ejection

(1) Open

(2) Closed

(3) Integral structure

(9) Unknown

16. Entrapment 0

(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)

(0) Not entrapped

(1) Entrapped

(9) Unknown

**RESTRAINT SYSTEM AND SEAT EVALUATION****17. Manual (Active) Belt System Availability** 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): \_\_\_\_\_

(9) Unknown

**18. Manual (Active) Belt System Use** 00

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): \_\_\_\_\_

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): \_\_\_\_\_

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat (specify): \_\_\_\_\_

(99) Unknown if belt used

**19. Proper Use of Manual (Active) Belts** 0

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

**Belt Used Improperly**

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

- (8) Other improper use of manual belt system (specify): \_\_\_\_\_

(9) Unknown

**20. Manual (Active) Belt Failure Modes During Accident** 0

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): \_\_\_\_\_

- (6) Broken retractor
- (7) Combination of above (specify): \_\_\_\_\_

- (8) Other manual belt failure (specify): \_\_\_\_\_

(9) Unknown

**21. Automatic (Passive) Restraint System Availability** 1

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): \_\_\_\_\_

- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

**22. Automatic (Passive) Restraint Function** 4

- (0) Not equipped/not available

**Automatic Belt**

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

**Air Bag**

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

**23. Did Automatic (Passive) Restraint Fail?** 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): \_\_\_\_\_

(9) Unknown

**24. Police Reported Restraint Use** 7

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): \_\_\_\_\_

AIR BAG DEPLOYED

- (8) Restrained, type unknown
- (9) Police indicated "unknown"

**25. Head Restraint Type/Damage by Occupant at This Occupant Position** 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): \_\_\_\_\_

(9) Unknown



**26. Seat Type (This Occupant Position)** 06

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify):

\_\_\_\_\_

(99) Unknown

**27. Seat Performance (This Occupant Position)** 1

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat track/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify):

\_\_\_\_\_

\_\_\_\_\_

(7) Combination of above (specify):

\_\_\_\_\_

(8) Other (specify):

\_\_\_\_\_

(9) Unknown

**CHILD SAFETY SEAT****28. Child Safety Seat Make/Model** 000

- (000) No child safety seat
- Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual
- (997) Other make/model (specify):

\_\_\_\_\_

(998) Unknown make/model

(999) Unknown if child safety seat used

**29. Type of Child Safety Seat** 0

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

\_\_\_\_\_

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

**30. Child Safety Seat Orientation** 00

- (00) No child safety seat

Designed for Rear Facing for This Age/Weight

- (01) Rear facing
- (02) Forward facing
- (08) Other orientation (specify):

\_\_\_\_\_

(09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

\_\_\_\_\_

(19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

\_\_\_\_\_

(29) Unknown orientation

(99) Unknown if child safety seat used

**31. Child Safety Seat Harness Usage** 00**32. Child Safety Seat Shield Usage** 00**33. Child Safety Seat Tether Usage** 00

Note: Options below applicable to Variables OA31-OA33.

- (00) No child safety seat

Not Designed with  
Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

**INJURY CONSEQUENCES****34. Injury Severity (Police Rating)** 3

- (0) O – No injury
- (1) C – Possible injury
- (2) B – Nonincapacitating injury
- (3) A – Incapacitating injury
- (4) K – Killed
- (5) U – Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

**35. Treatment – Mortality** 3

- (0) No treatment
- (1) Fatal
- (2) Fatal – ruled disease

Nonfatal

- (3) Hospitalized
- (4) Transported and released
- (5) Treatment at scene – nontransported
- (6) Treatment later
- (8) Treatment – other (specify):

(9) Unknown

**36. Type of Medical Facility (for Initial Treatment)** 2

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):

(9) Unknown

**37. Hospital stay** 40

- Code number of days (up through 60) that the occupant stayed in the hospital
- (00) Not hospitalized
  - (61) 61 days or more
  - (99) Unknown

**38. Working Days Lost** 61

- Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
  - (61) 61 days or more
  - (62) Fatally injured
  - (97) Not working prior to accident
  - (99) Unknown

**39. Time to Death** 00

- Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)
- (00) Not fatal
  - (96) Fatal – ruled disease
  - (99) Unknown

**40. 1st Medically Reported Cause of Death** 00**41. 2nd Medically Reported Cause of Death** 00**42. 3rd Medically Reported Cause of Death** 00

- Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
- (00) Not fatal or no additional causes
  - (97) Other result (specify):

(99) Unknown

**43. Number of Recorded Injuries for This Occupant** 08

- Code the actual number of injuries recorded for this occupant.
- (00) No recorded injuries
  - (97) Injured, details unknown
  - (99) Unknown if injured

UPDATE CANDIDATE

NO ☒YES ☐**\*\*\* STOP HERE \*\*\*****IF THERE ARE NO RECORDED INJURIES****(I.E., OA43=00, 97, 99)**



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

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Form Approved  
O.M.B. No. 2127-0021  
NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

## OCCUPANT INJURY FORM

1. ~~Primary Sampling Unit Number~~ \_\_\_\_\_ 3. Vehicle Number 01  
2. Case Number ~~Stratum~~ 90-14 4. Occupant Number 01

### INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	Body Region	Aspect	Lesion	System Organ	A.I.S. Severity	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
1st	5. <u>2</u>	6. <u>Q</u>	7. <u>R</u>	8. <u>Z</u>	9. <u>J</u>	10. <u>3</u>	11. <u>56</u>	12. <u>1</u>	13. <u>1</u>	14. <u>03</u>
2nd	15. <u>2</u>	16. <u>T</u>	17. <u>R</u>	18. <u>F</u>	19. <u>S</u>	20. <u>3</u>	21. <u>13</u>	22. <u>1</u>	23. <u>2</u>	24. <u>02</u>
3rd	25. <u>2</u>	26. <u>R</u>	27. <u>R</u>	28. <u>F</u>	29. <u>S</u>	30. <u>3</u>	31. <u>10</u>	32. <u>1</u>	33. <u>1</u>	34. <u>02</u>
4th	35. <u>2</u>	36. <u>R</u>	37. <u>R</u>	38. <u>F</u>	39. <u>S</u>	40. <u>3</u>	41. <u>10</u>	42. <u>1</u>	43. <u>1</u>	44. <u>02</u>
5th	45. <u>2</u>	46. <u>Q</u>	47. <u>R</u>	48. <u>F</u>	49. <u>S</u>	50. <u>2</u>	51. <u>56</u>	52. <u>1</u>	53. <u>1</u>	54. <u>04</u>
6th	55. <u>2</u>	56. <u>Q</u>	57. <u>L</u>	58. <u>F</u>	59. <u>S</u>	60. <u>2</u>	61. <u>56</u>	62. <u>1</u>	63. <u>1</u>	64. <u>03</u>
7th	65. <u>2</u>	66. <u>P</u>	67. <u>R</u>	68. <u>F</u>	69. <u>S</u>	70. <u>2</u>	71. <u>13</u>	72. <u>1</u>	73. <u>2</u>	74. <u>02</u>
8th	75. <u>2</u>	76. <u>K</u>	77. <u>R</u>	78. <u>F</u>	79. <u>S</u>	80. <u>2</u>	81. <u>13</u>	82. <u>1</u>	83. <u>1</u>	84. <u>02</u>
9th	85. <u>  </u>	86. <u>  </u>	87. <u>  </u>	88. <u>  </u>	89. <u>  </u>	90. <u>  </u>	91. <u>  </u>	92. <u>  </u>	93. <u>  </u>	94. <u>  </u>
10th	95. <u>  </u>	96. <u>  </u>	97. <u>  </u>	98. <u>  </u>	99. <u>  </u>	100. <u>  </u>	101. <u>  </u>	102. <u>  </u>	103. <u>  </u>	104. <u>  </u>

AGE 43  
SEX Male  
WT. 175 lbs.  
HT. 68"

Displaced fracture of the right radius and ulna (AIS-3), steering wheel and/or center instrument panel contact

Fractured right acetabulum (AIS-2), induced fracture from knee bolster contact

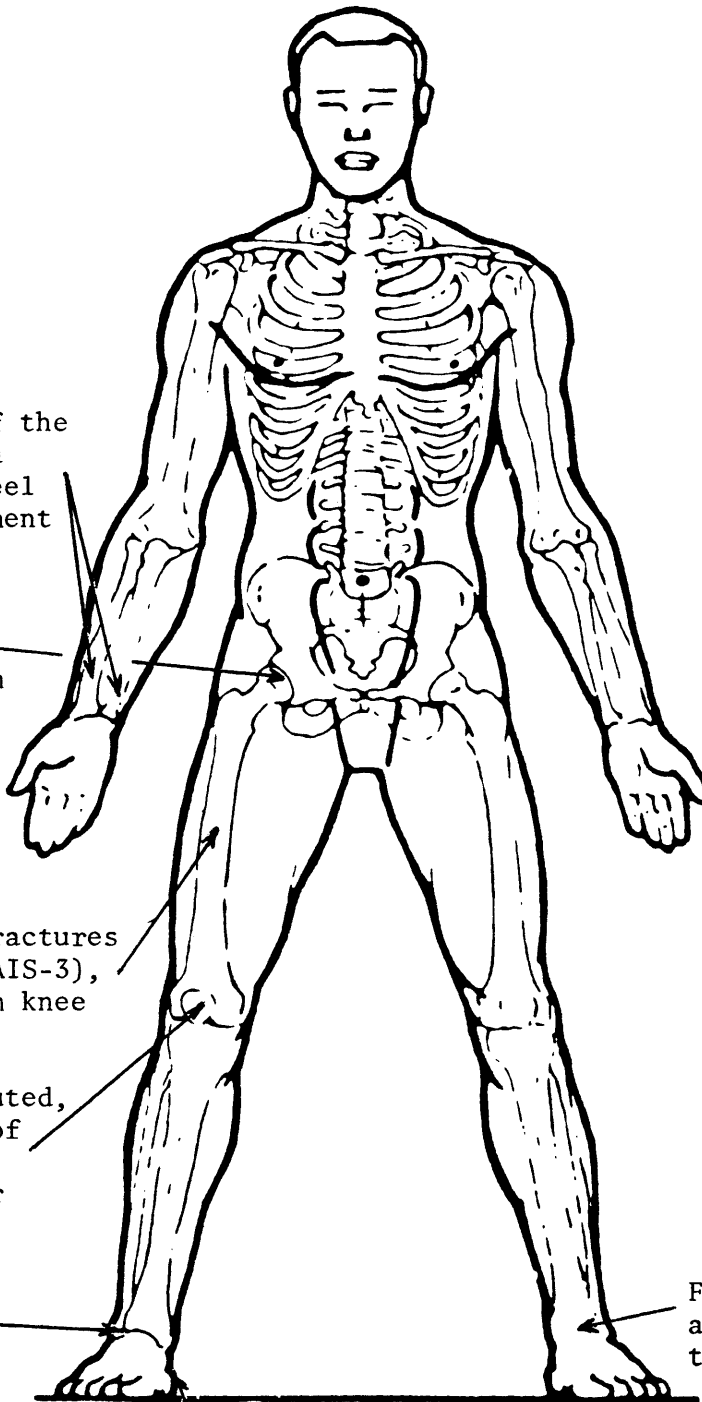
Multiple displaced fractures of the right femur (AIS-3), induced fracture from knee bolster contact

Open, grossly comminuted, fragmented fracture of the right patella (AIS-2), knee bolster

Fracture/dislocation of the right ankle (AIS-3), intruding toe pan

Fracture of the left ankle (AIS-2), intruding toe pan

Fracture of the right heel (QRFS-2), intruding toe/floor pan



**SOURCE OF INJURY DATA****OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

**UNOFFICIAL**

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): \_\_\_\_\_
- (9) Police

**INJURY SOURCE****FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

**LEFT SIDE**

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

**RIGHT SIDE**

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

**INTERIOR**

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): \_\_\_\_\_
- (47) Interior loose objects
- (48) Child safety seat (specify): \_\_\_\_\_
- (49) Other interior object (specify): \_\_\_\_\_

**ROOF**

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

**FLOOR**

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

**REAR**

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

**EXTERIOR OF OCCUPANT'S VEHICLE**

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): \_\_\_\_\_
- (68) Unknown exterior objects

**EXTERIOR OF OTHER MOTOR VEHICLE**

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): \_\_\_\_\_
- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): \_\_\_\_\_
- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): \_\_\_\_\_

- (83) Unknown exterior of other motor vehicle

**OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT**

- (84) Ground
- (85) Other vehicle or object (specify): \_\_\_\_\_

- (86) Unknown vehicle or object

**NONCONTACT INJURY**

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): \_\_\_\_\_
- (97) Injured, unknown source

**INJURY SOURCE CONFIDENCE LEVEL**

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

**DIRECT/INDIRECT INJURY**

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

**OCCUPANT INJURY CLASSIFICATION****O.I.C. Body Region**

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body

**(W) Wrist-hand****Aspect of Injury**

- (A) Anterior-front
- (B) Bilateral (rib fracture only)
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

**Lesion**

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush

**(G) Detachment, separation**

- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

**System/Organ**

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

**(I) Integumentary**

- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

**Abbreviated Injury Scale**

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity



## OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number       
2. Case Number - ~~Stratum~~ 90-14  
3. Vehicle Number 01  
4. Occupant Number 02

### OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 16  
Code actual age at time of accident.  
(00) Less than one year old (specify by month):  
\_\_\_\_\_  
(97) 97 years and older  
(99) Unknown
6. Occupant's Sex 2  
(1) Male  
(2) Female  
(9) Unknown
7. Occupant's Height 64  
Code actual height to the nearest inch.  
(99) Unknown
8. Occupant's Weight 100  
Code actual weight to the nearest pound.  
(999) Unknown
9. Occupant's Role 2  
(1) Driver  
(2) Passenger  
(9) Unknown
10. Occupant's Seat Position 13  
Front Seat  
(11) Left side  
(12) Middle  
(13) Right side  
(14) Other (specify): \_\_\_\_\_  
Second Seat  
(21) Left side  
(22) Middle  
(23) Right side  
(24) Other (specify): \_\_\_\_\_  
Third Seat  
(31) Left side  
(32) Middle  
(33) Right side  
(34) Other (specify): \_\_\_\_\_  
Fourth Seat  
(41) Left side  
(42) Middle  
(43) Right side  
(44) Other (specify): \_\_\_\_\_  
(97) In or on unenclosed area  
(98) Other seat (specify): \_\_\_\_\_  
(99) Unknown

11. Occupant's Posture 0  
(0) Normal posture  
(1) Abnormal posture (specify): \_\_\_\_\_  
(9) Unknown

### EJECTION/ENTRAPMENT

12. Ejection 0  
(0) No ejection  
(1) Complete ejection  
(2) Partial ejection  
(3) Ejection, unknown degree  
(9) Unknown
13. Ejection Area 0  
(0) No ejection  
(1) Windshield  
(2) Left front  
(3) Right front  
(4) Left rear  
(5) Right rear  
(6) Rear  
(7) Roof  
(8) Other area (e.g., back of pickup, etc.)  
(specify): \_\_\_\_\_  
(9) Unknown
14. Ejection Medium 0  
(0) No ejection  
(1) Door/hatch/tailgate  
(2) Nonfixed roof structure  
(3) Fixed glazing  
(4) Nonfixed glazing (specify): \_\_\_\_\_  
(5) Integral structure  
(8) Other medium (specify): \_\_\_\_\_  
(9) Unknown
15. Medium Status (Immediately Prior to Impact) 0  
(0) No ejection  
(1) Open  
(2) Closed  
(3) Integral structure  
(9) Unknown
16. Entrapment 0  
(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)  
(0) Not entrapped  
(1) Entrapped  
(9) Unknown

**RESTRAINT SYSTEM AND SEAT EVALUATION****17. Manual (Active) Belt System Availability** 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): \_\_\_\_\_

(9) Unknown

**18. Manual (Active) Belt System Use** 00

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): \_\_\_\_\_

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): \_\_\_\_\_

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat (specify): \_\_\_\_\_

(99) Unknown if belt used

**19. Proper Use of Manual (Active) Belts** 0

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

(8) Other improper use of manual belt system (specify): \_\_\_\_\_

(9) Unknown

**20. Manual (Active) Belt Failure Modes During Accident** 0

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): \_\_\_\_\_

- (6) Broken retractor
- (7) Combination of above (specify): \_\_\_\_\_

(8) Other manual belt failure (specify): \_\_\_\_\_

(9) Unknown

**21. Automatic (Passive) Restraint System Availability** 0

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): \_\_\_\_\_

- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

**22. Automatic (Passive) Restraint Function** 0

- (0) Not equipped/not available

Automatic Belt

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

Air Bag

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

**23. Did Automatic (Passive) Restraint Fail?** 0

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): \_\_\_\_\_

(9) Unknown

**24. Police Reported Restraint Use** 0

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): \_\_\_\_\_

- (8) Restrained, type unknown
- (9) Police indicated "unknown"

**25. Head Restraint Type/Damage by Occupant at This Occupant Position** 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): \_\_\_\_\_

(9) Unknown



26. Seat Type (This Occupant Position) 06

- (00) Occupant not seated or no seat  
 (01) Bucket  
 (02) Bucket with folding back  
 (03) Bench  
 (04) Bench with separate back cushions  
 (05) Bench with folding back(s)  
 (06) Split bench with separate back cushions  
 (07) Split bench with folding back(s)  
 (08) Pedestal (i.e., van type)  
 (09) Other seat type (specify):  
 \_\_\_\_\_  
 (99) Unknown

27. Seat Performance (This Occupant Position) 1

- (0) Occupant not seated or no seat  
 (1) No seat performance failure(s)  
 (2) Seat adjusters failed  
 (3) Seat back folding locks failed  
 (4) Seat track/anchors failed  
 (5) Deformed by impact of occupant  
 (6) Deformed by passenger compartment intrusion (specify):  
TRACKS DEFORMED  
 \_\_\_\_\_  
 \_\_\_\_\_  
 (7) Combination of above (specify):  
 \_\_\_\_\_  
 (8) Other (specify):  
 \_\_\_\_\_  
 (9) Unknown

**CHILD SAFETY SEAT**28. Child Safety Seat Make/Model 000

- (000) No child safety seat  
 Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual  
 (997) Other make/model (specify):  
 \_\_\_\_\_  
 (998) Unknown make/model  
 (999) Unknown if child safety seat used

29. Type of Child Safety Seat 0

- (0) No child safety seat  
 (1) Infant seat  
 (2) Toddler seat  
 (3) Convertible seat  
 (4) Booster seat  
 (7) Other type child safety seat (specify):  
 \_\_\_\_\_  
 (8) Unknown child safety seat type  
 (9) Unknown if child safety seat used

30. Child Safety Seat Orientation 00

- (00) No child safety seat

Designed for Rear Facing for This Age/Weight

- (01) Rear facing  
 (02) Forward facing  
 (08) Other orientation (specify):  
 \_\_\_\_\_

- (09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing  
 (12) Forward facing  
 (18) Other orientation (specify):  
 \_\_\_\_\_

- (19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing  
 (22) Forward facing  
 (28) Other orientation (specify):  
 \_\_\_\_\_

- (29) Unknown orientation

- (99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 0032. Child Safety Seat Shield Usage 0033. Child Safety Seat Tether Usage 00

Note: Options below applicable to Variables OA31-OA33.

- (00) No child safety seat

Not Designed with

Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used  
 (02) After market harness/shield/tether used  
 (03) Child safety seat used, but no after market harness/shield/tether added  
 (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used  
 (12) Harness/shield/tether used  
 (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used  
 (22) Harness/shield/tether used  
 (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

**INJURY CONSEQUENCES****34. Injury Severity (Police Rating)** 3

- (0) O – No injury
- (1) C – Possible injury
- (2) B – Nonincapacitating injury
- (3) A – Incapacitating injury
- (4) K – Killed
- (5) U – Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

**35. Treatment – Mortality** 3

- (0) No treatment
- (1) Fatal
- (2) Fatal – ruled disease

Nonfatal

- (3) Hospitalized
- (4) Transported and released
- (5) Treatment at scene – nontransported
- (6) Treatment later
- (8) Treatment – other (specify):

---

 (9) Unknown
**36. Type of Medical Facility (for Initial Treatment)** 2

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):

---

 (9) Unknown
**37. Hospital stay** 99

- \_\_\_\_ Code number of days (up through 60) that the occupant stayed in the hospital
- (00) Not hospitalized
  - (61) 61 days or more
  - (99) Unknown

**38. Working Days Lost** 97

- \_\_\_\_ Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
  - (61) 61 days or more
  - (62) Fatally injured
  - (97) Not working prior to accident
  - (99) Unknown

**39. Time to Death** 00

- \_\_\_\_ Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)
- (00) Not fatal
  - (96) Fatal – ruled disease
  - (99) Unknown

**40. 1st Medically Reported Cause of Death** 00**41. 2nd Medically Reported Cause of Death** 00**42. 3rd Medically Reported Cause of Death** 00

- \_\_\_\_ Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
- (00) Not fatal or no additional causes
  - (97) Other result (specify):

---

 (99) Unknown
**43. Number of Recorded Injuries for This Occupant** 05

- \_\_\_\_ Code the actual number of injuries recorded for this occupant.
- (00) No recorded injuries
  - (97) Injured, details unknown
  - (99) Unknown if injured

UPDATE CANDIDATE

NO [☒]

YES [ ]

**\*\*\* STOP HERE \*\*\*****IF THERE ARE NO RECORDED INJURIES****(I.E., OA43=00, 97, 99)**



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

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Form Approved  
O.M.B. No. 2127-0021  
NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

## OCCUPANT INJURY FORM

1. ~~Primary Sampling Unit Number~~ \_\_\_\_\_ 3. Vehicle Number 01  
2. Case Number ~~Stratum~~ 90-14 4. Occupant Number 01

### INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	Body Region	Aspect	Lesion	System Organ	A.I.S. Severity	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
1st	5. <u>9</u>	6. <u>H</u>	7. <u>W</u>	8. <u>K</u>	9. <u>G</u>	10. <u>5</u>	11. <u>32</u>	12. <u>1</u>	13. <u>1</u>	14. <u>07</u>
2nd	15. <u>9</u>	16. <u>H</u>	17. <u>I</u>	18. <u>F</u>	19. <u>S</u>	20. <u>3</u>	21. <u>32</u>	22. <u>1</u>	23. <u>1</u>	24. <u>07</u>
3rd	25. <u>9</u>	26. <u>E</u>	27. <u>S</u>	28. <u>C</u>	29. <u>I</u>	30. <u>1</u>	31. <u>32</u>	32. <u>1</u>	33. <u>1</u>	34. <u>07</u>
4th	35. <u>9</u>	36. <u>F</u>	37. <u>W</u>	38. <u>A</u>	39. <u>I</u>	40. <u>1</u>	41. <u>01</u>	42. <u>1</u>	43. <u>1</u>	44. <u>08</u>
5th	45. <u>9</u>	46. <u>E</u>	47. <u>W</u>	48. <u>L</u>	49. <u>I</u>	50. <u>1</u>	51. <u>01</u>	52. <u>1</u>	53. <u>1</u>	54. <u>08</u>
6th	55. ____	56. ____	57. ____	58. ____	59. ____	60. ____	61. ____	62. ____	63. ____	64. ____
7th	65. ____	66. ____	67. ____	68. ____	69. ____	70. ____	71. ____	72. ____	73. ____	74. ____
8th	75. ____	76. ____	77. ____	78. ____	79. ____	80. ____	81. ____	82. ____	83. ____	84. ____
9th	85. ____	86. ____	87. ____	88. ____	89. ____	90. ____	91. ____	92. ____	93. ____	94. ____
10th	95. ____	96. ____	97. ____	98. ____	99. ____	100. ____	101. ____	102. ____	103. ____	104. ____

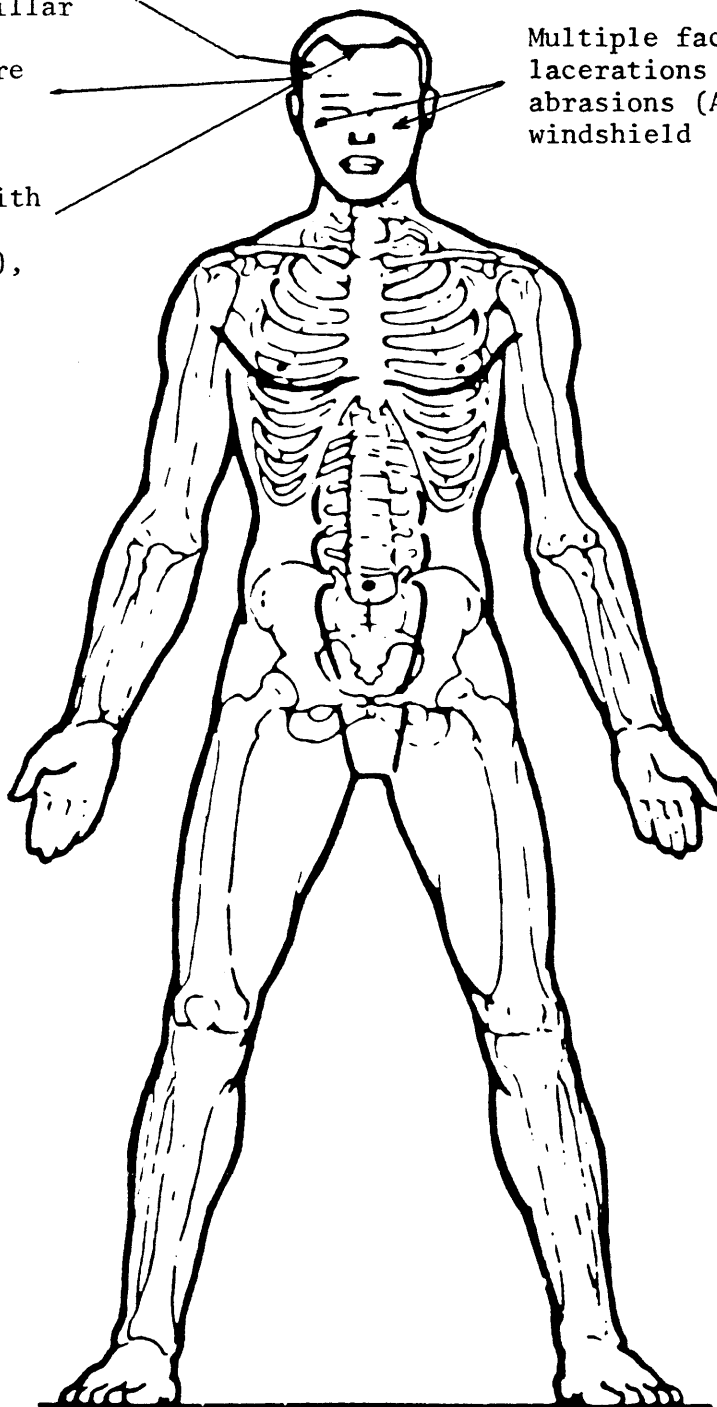
Large contusion of the  
right forehead (AIS-1),  
upper right A-pillar

Basilar skull fracture  
(AIS-3), upper right  
A-pillar contact

Closed head injury with  
prolonged loss of  
consciousness (AIS-5),  
upper right A-pillar

Multiple facial  
lacerations and  
abrasions (AIS-1),  
windshield

**AGE** 16  
**SEX** Female  
**WT.** 100 lbs.  
**HT.** 64"



**SOURCE OF INJURY DATA****OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

**UNOFFICIAL**

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): \_\_\_\_\_
- (9) Police

**INJURY SOURCE****FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

**LEFT SIDE**

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

**RIGHT SIDE**

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

**INTERIOR**

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): \_\_\_\_\_
- (47) Interior loose objects
- (48) Child safety seat (specify): \_\_\_\_\_
- (49) Other interior object (specify): \_\_\_\_\_

**ROOF**

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

**FLOOR**

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

**REAR**

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

**EXTERIOR OF OCCUPANT'S VEHICLE**

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): \_\_\_\_\_
- (68) Unknown exterior objects

**EXTERIOR OF OTHER MOTOR VEHICLE**

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): \_\_\_\_\_
- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): \_\_\_\_\_
- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): \_\_\_\_\_

- (83) Unknown exterior of other motor vehicle

**OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT**

- (84) Ground
- (85) Other vehicle or object (specify): \_\_\_\_\_

- (86) Unknown vehicle or object

**NONCONTACT INJURY**

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): \_\_\_\_\_
- (97) Injured, unknown source

**INJURY SOURCE CONFIDENCE LEVEL**

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

**DIRECT/INDIRECT INJURY**

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

**OCCUPANT INJURY CLASSIFICATION****O.I.C. Body Region**

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body

**(W) Wrist-hand****Aspect of Injury**

- (A) Anterior-front
- (B) Bilateral (rib fracture only)
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

**Lesion**

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush

**(G) Detachment, separation**

- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

**System/Organ**

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

**(I) Integumentary**

- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

**Abbreviated Injury Scale**

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity